JUNE 1, 1954

MODERN MEDICINE

The Journal of Diagnosis and Treatment

Dr. Louis T. Palumbo

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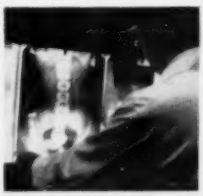
Bentyl *proves more effective than atropine in "Nervous Indigestion"*

FROM BETTMANN ARCHIVE

McHardy[1] reports that Bentyl is "superior to atropine" for relief of pain due to pylorospasm. He confirms the work of others that Bentyl is free from significant side effects which permits more general use in nervous indigestion.

When you prescribe Bentyl, you prescribe patient comfort. You will rarely hear patients complain about "belladonna backfire" or dry mouth and blurred vision. Use Bentyl for your next nervous indigestion patient. Relief of G.I. spasm is quick, complete and comfortable.



New technic of measuring human motility shows a decrease or complete suppression of intestinal pressure waves, depending on dosage of Bentyl.[2] Bentyl acts by blocking acetylcholine and directly affects the muscle fibers like papaverine.

COMPOSITION: Each Bentyl Capsule or teaspoonful *Bentyl Syrup* contains 10 mg. Bentyl (dicyclomine) Hydrochloride.

Also *Bentyl* (10 mg.) with *Phenobarbital* (15 mg.) *Capsules and Syrup*, and *Bentyl Injection*, 10 mg. per cc.

DOSAGE: Prescribe Bentyl, 2 capsules or 2 teaspoonfuls Bentyl Syrup three times daily and at bedtime. Infants and Children, ½ to 1 teaspoonful Syrup 10 to 15 minutes before feeding, three times daily.

1. McHardy and Brown: Sou. M.J. 45:1139, 1952.

2. Lorber and Shay: Fred. Proc. 12:90, 1953.

Complete Bentyl bibliography on request.

T.M. 'Bentyl'

Bentyl

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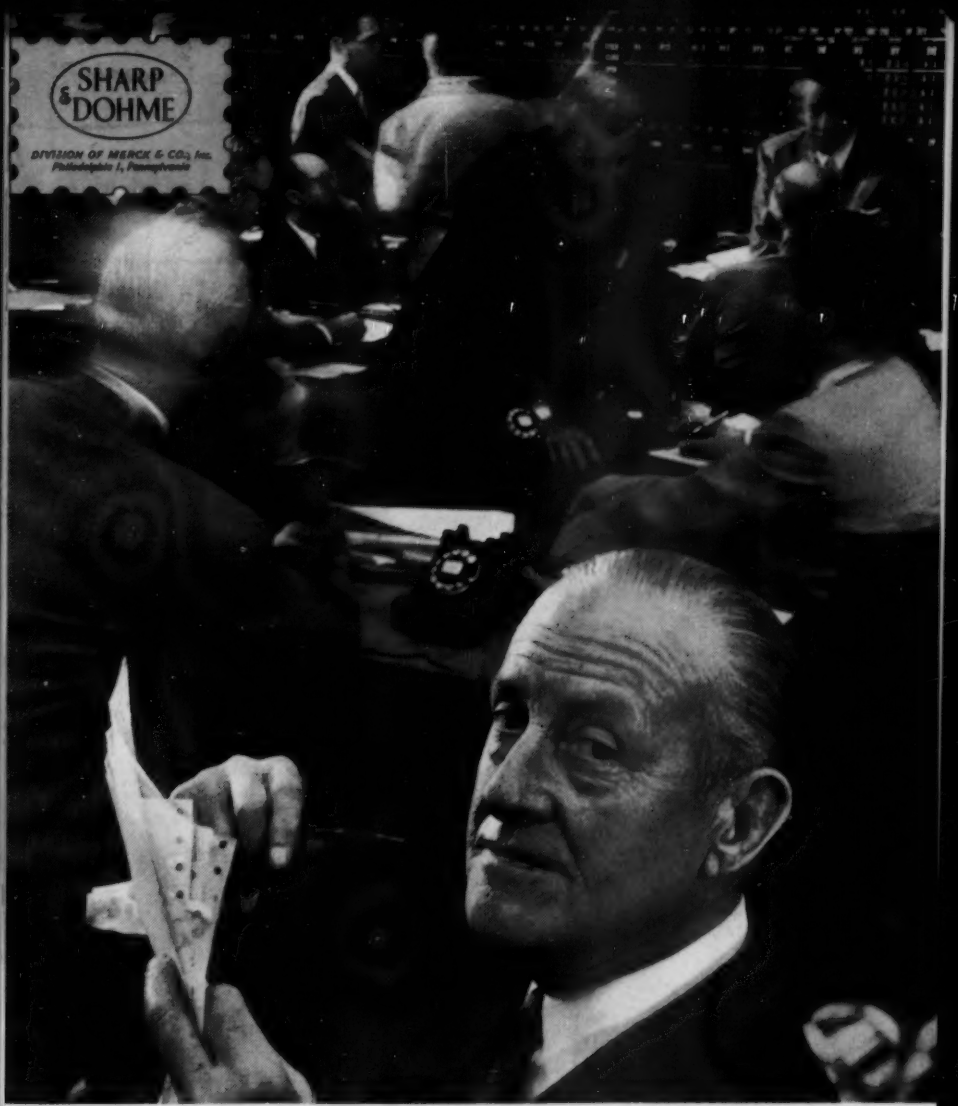

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MODERN CONTENTS

Volume 22
Number 11

DEPARTMENTS

MEDICINE

SURGERY

MODERN MEDICINE

The Journal of Medical Progress, of Minneapolis, Minn., is published twice monthly on the first and fifteenth of each month, at 55 East 10th Street, St. Paul 2, Minn. Subscription rate: $10.00 a year, 50c a copy.

Address all correspondence to 84 South 10th Street, Minneapolis 3, Minn.

Acceptance under section 34.64, P. L. & R., authorized.

MEDICINE
for June 1, 1954

Walter C. Alvarez
Editor-in-Chief

●

THE MAN ON THE COVER is Dr. Louis T. Palumbo, Associate Clinical Professor of Surgery at the State University of Iowa. Since 1946 Dr. Palumbo has been chief of the surgical service at the Veterans Administration Center, Des Moines, and senior consulting surgeon at the Veterans Hospital, Knoxville, Iowa. He is a fellow of the American College of Surgeons, diplomate of the American Board of Surgery, and a member of the Central Surgical Association and other medical organizations. Dr. Palumbo has contributed 75 articles on surgery to medical journals, including the Special Exhibit, "Adominal Incisions," on page 113. He is author of the book, *Low Back Pain and Sciatica.*

CONTINUED

Contents for June 1 1954

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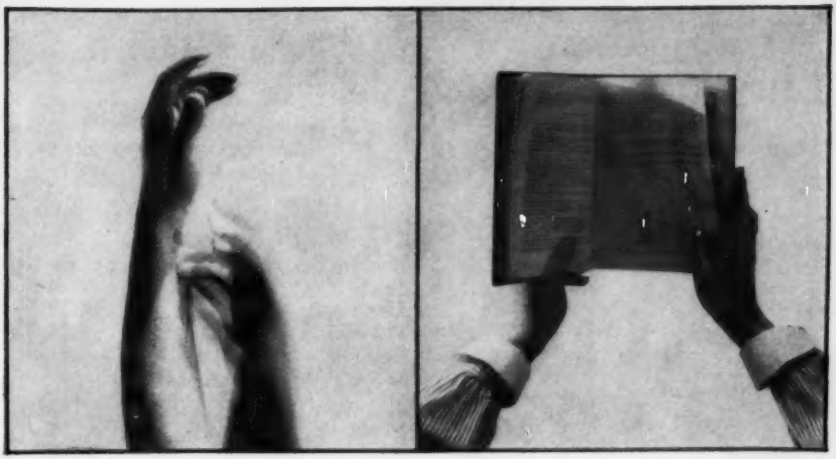
Of two patients with poison ivy...



one aggravates the dermatitis venenata by vicious scratching; the result: excoriation and infectious eczematoid dermatitis.

the other is not disturbed by itching. The dermatitis venenata is permitted to clear rapidly and without annoying complications.

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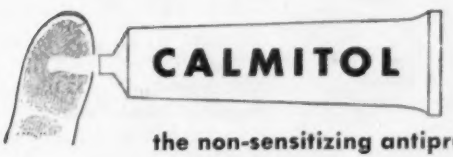

the non-sensitizing antipruritic

1½ oz. tubes and 1 lb. jars

1. Lubowe, I. I.: New York State J. Med. 50:1743, 1950.

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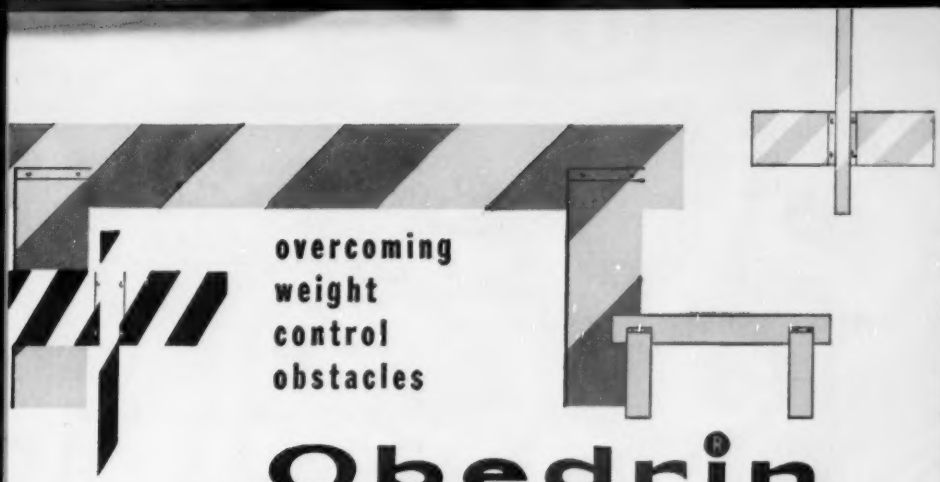
MODERN MEDICINE

Therapeutic Index

for June 1, 1954

THIS INDEX, prepared for your convenience, lists all advertised products in this issue. Specific information on each product will be found on the pages listed.



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MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

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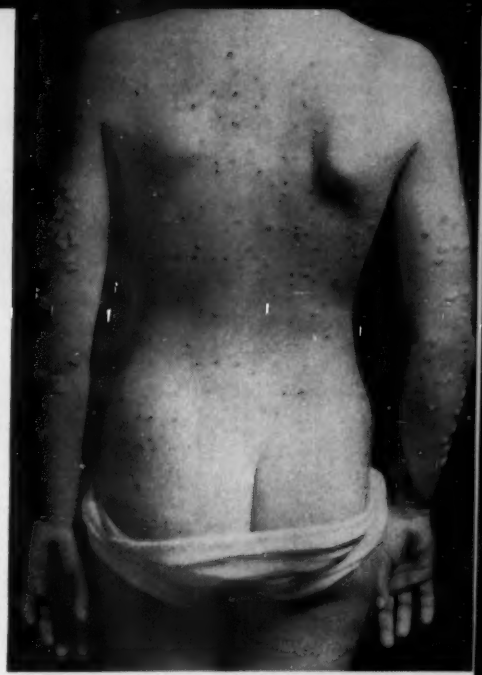
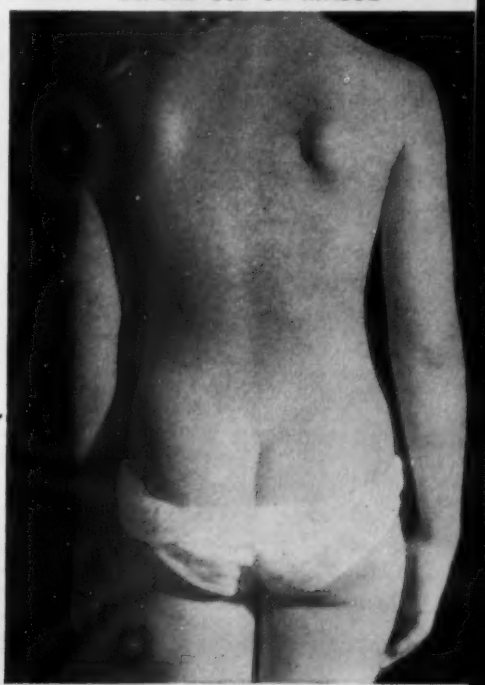


BEFORE USE OF RIASOL



AFTER USE OF RIASOL

RIASOL FOR PSORIASIS

MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

LETTER FROM THE EDITORS

Dear Reader:

Each month a stack of magazines nearly ten feet high is sent from the library of Modern Medicine to the reading rooms of several local hospitals and to physicians' reading clubs. This stack represents the journals perused for the hundred pages or so of reports that are brought to you twice a month in *Modern Medicine.*

Every one of these journals has been carefully scanned by several editors who are also physicians. These men looked for the articles of significance that the general practitioner should know about but probably would never see. Most of the journals are specialty journals that circulate only among the practitioners of a particular field. Others are state or regional journals with geographic limits to their distribution. Still others are from foreign countries and can be found in only a few large libraries in North America. Even were all of these journals easily available, the sheer mass of published material would serve as an effective deterrent to reading. Where would one start?

That question is made easier for you by the first reading that is done by the members of the Editorial Boards and Editorial Staff of *Modern Medicine.* Not one but nearly fourscore questing minds are on the alert for information you would like to have. After the sifting and screening, skillful, trained science writers compose detailed and specific reports giving you the essential information organized in an easy to read and easy to comprehend style. To keep up to date you have only to start your reading with this issue of *Modern Medicine.*

The Editors

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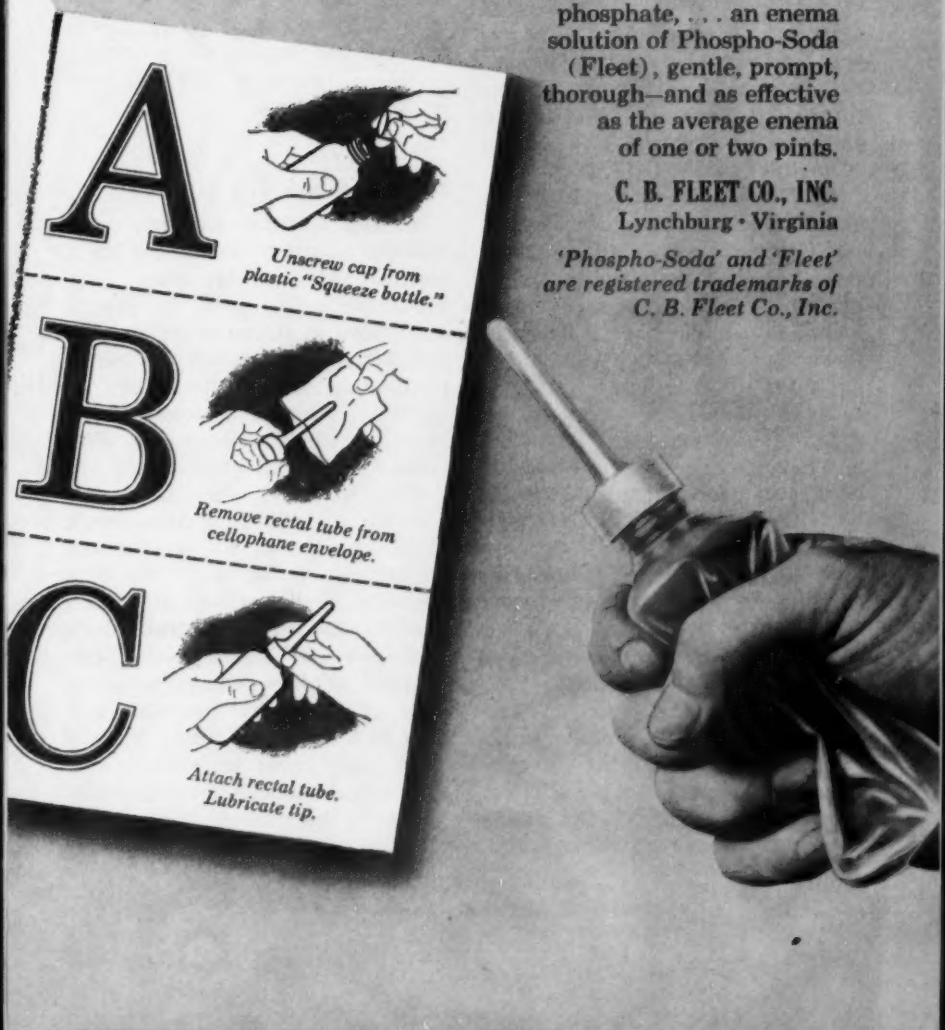

Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Spread of Neoplastic Disease

TO THE EDITORS: I hope that your readers will bear in mind three points which seem to me to represent differences between the intended meaning of my article on the spread of neoplastic disease and your published summary *(Modern Medicine,* Mar. 1, 1954, p. 121).

1] Hemoptysis occurs with metastatic pulmonary cancer of various origins not exclusively from cancer of the colon and from lymphoma. A high percentage of patients with pulmonary metastases from chorionepithelioma have hemoptysis.

2] Hormone level alteration with or without concomitant radiotherapy has accomplished little for patients at our institution except those who have relatively well-differentiated sex-linked cancers.

3] Radical radiotherapy and radical surgery, even when conducted on the extremely radical scales of recent years, seem to offer more for slowly spreading cancers such as those of the oral cavity and larynx than for rapidly spreading cancers such as those from the pancreas, stomach, and lungs. It is not advocated that such radical procedures be undertaken when metastases are beyond the resected tissue.

In my estimation *Modern Medicine* accomplishes an important mission well. I hope that you will continue and expand this service.

JOHN W. TURNER, M.D.
Springfield, Mass.

Stellate Block for Stroke

TO THE EDITORS: I do not think that the editorial "Something for a Stroke" *(Modern Medicine,* Feb. 15, 1954, p. 76) gives the proper impression. A summary by Shenkin and Novak of the work on the nitrous-oxide technic for study of cerebral circulation appeared in the *Archives of Neurology and Psychiatry* (71:148-159, 1954).

It is true that when using this technic a stellate ganglion block cannot be shown to improve the circulation of the brain. But this does not mean that with a cerebral vascular accident a stellate block is of no value. Actual cerebral circulatory studies during the acute stage of a cerebral vascular accident have not been done. Even if done, the benefit to a local area of the brain would not necessarily appear in this over-all study.

(Continued on page 20)

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Summit, N. J.

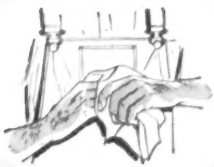
*Sulzberger, Marion B., and Wolf, J.: Dermatologic Therapy in General Practice, ed. 3, Chicago, Year Book Publishers, Inc., 1948, p. 107.

S/1734M

CIBA

Allergies are always "in season".

...in food allergies...



...contact dermatitis

drug allergies...

...allergic coughs

insect bites...

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In the second place, bilateral removal of the stellate ganglion or bilateral stellate block does appear to be effective in arteriosclerotic patients who are also hypertensive.

It is perhaps just fortunate that I have had no accidents with stellate ganglion block, but in my hands and in the hands of many others who use the anterior approach there have been no pneumothorax and no injection into a major blood vessel to produce harm. Those of us who have made angiograms in the presence of vasospasm are convinced that in at least some patients stellate ganglion block can result in a relaxation of vasospasm, which is usually to be found in the major vessels from the circle of Willis.

Anyone who has followed the work of Shenkin, Kety, and Schmitt would not try to give inhalations of 100% oxygen but would give rather 5% carbon dioxide or 10% carbon dioxide in a gas mixture with oxygen since this vasodilator is particularly effective for patients who are arteriosclerotic and hypertensive.

There is a drug which can be used to improve cerebral circulation as shown by the nitrous-oxide technic. Papaverine can be given both intravenously and orally in dosages of 1.5 to 4.5 gr., depending on the patient. These amounts are not excessive, although larger than those conventionally used by most physicians.

for the flora that "bloom" in the spring

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topical ointment

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Finally, intravenous injection of hypertonic salt solution would not be theoretically appropriate since the effect of the solution in dehydrating the brain is transient. Also the blood is dehydrated and becomes more viscous, thereby increasing the possibility of additional thrombosis.

Mention should be made of the dangers of any vasodilator therapy in a patient who has bled into the brain. A minimal prerequisite for such treatment should be a lumbar puncture to insure the absence of blood. Even if none is found, the condition of the patient and the story of onset may contraindicate attempts to increase circulation.

All of the above is applicable only if there has been an element of vasospasm or constriction of blood vessels accompanying the stroke. Certainly if a thrombus has occurred in a major vessel, killing the cells in the distribution which has been rendered anemic, nothing can be gained by increasing the circulation generally. Accordingly, even under the best circumstances only a relatively small percentage of patients who have strokes are going to be helped by any measures, especially since the survival time of cerebral cortical cells after complete anemia is little more than five minutes, and one rarely sees a patient so soon after a stroke.

OSCAR SUGAR, M.D.

Chicago

Toxicity Overemphasized

TO THE EDITORS: I have just had the opportunity to read the February 1, 1954 issue of *Modern Medicine* and believe that the abstracting of the article, "The Treatment

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Improved stability in parkinsonism therapy

Orally administered Parsidol has produced favorable responses in 60-80% of patients with widely varying parkinsonian symptomatology.[1] Either alone or in combination with adjunctive therapy, Parsidol is effective in controlling symptoms of parkinsonism such as akinesia, tremor, spasm, festination, sialorrhea, oculogyric crises and extrapyramidal hypertonicity.[2]

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1. Gallagher, D. J. A., and Palmer, H.: New Zealand M. J. 49:531 (Oct.) 1950.
2. Sigwald, J.: Presse méd. 59:819 (Sept. 17) 1949.
3. Timberlake, W. H., and Schwab, R. S.: New England J. Med. 247:98 (July 17) 1952.

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Brand of N-(2-diethylaminopropyl)phenothiazine hydrochloride

WARNER-CHILCOTT *Laboratories* NEW YORK

of Gout," by Drs. John H. Talbott and L. Maxwell Lockie (p. 85) is a little misleading toward the end of the report. The section concerning Benemid gives the impression that the side effects are quite bad, whereas in the original article, the authors state in the same paragraph in which side effects are mentioned that the toxicity is negligible. I believe it is quite unfortunate that the words "negligible" or "unimportant" were omitted.

There is no doubt that we had no opportunity to adequately control patients with gouty arthritis until we had a safe uricosuric agent such as Benemid. Of course, rheumatologists are aware of its utility and have used it continuously for approximately four years, whereas the general practitioner might be misled by this abstract and fail to use the one safe agent available for making life tolerable for the gouty patient.

Of course, I am not endeavoring to raise a tremendous issue; however, I believe that this is a slightly unfair presentation of the paper.

RICHARD T. SMITH, M.D.
Philadelphia

¶ Any misinterpretation of the article by Drs. Talbott and Lockie is regretted. The original paragraph stated: "The toxicity of this substance [Benemid] is thought to be unimportant clinically. Apprehension regarding the development of toxic symptoms decreases the longer Benemid is used. The side effects include some slight increase in incidence of acute attacks, increased tendency to passage of uric acid calculi, gastrointestinal irritation, genitourinary irritation, skin rash, and a serious anaphylactic reaction. The only toxic reactions that merit elaboration are the urate calculi and the anaphylactic reaction since the other phenomena subside promptly with cessation of the drug."—Ed.

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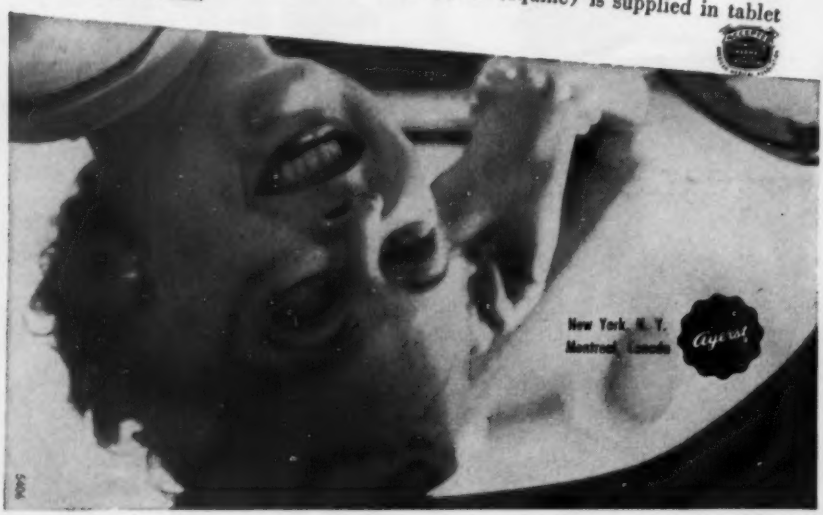
For every patient who presents such obvious menopausal symptoms as **hot flushes,** there will be another with symptoms equally distressing but not so clearly defined; **arthralgia** as well as insomnia, headache, easy fatigability, are good examples. Frequently these symptoms are due to declining ovarian function but are not so recognized because they may occur long before, or even years after, menstruation ceases. In such cases, the patient should have the **benefit** of estrogen therapy. **"Premarin"** (complete natural equine estrogen-complex) not only produces prompt symptomatic relief but also imparts a gratifying and distinctive **"sense of well-being."** Has no odor . . . imparts no odor. "Premarin"® estrogenic substances (water-soluble), also known as conjugated estrogens (equine) is supplied in tablet and liquid form.



Children find Mulcin so delicious that they're always eager for more. Good-tasting Mulcin supplies well balanced amounts of *all* vitamins for which Recommended Daily Allowances have been established. Tempting Mulcin has all the rich flavor and aroma of real orange juice. There's no need to coax even finicky children to take Mulcin. Free-flowing, easy-to-pour Mulcin does not separate and requires no shaking. For infants, Mulcin mixes easily with formulas or other foods. With Mulcin, refrigeration is unnecessary. Specially safeguarded stability assures the full potency you prescribe.

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Vitamin A	5000 units
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Mulcin

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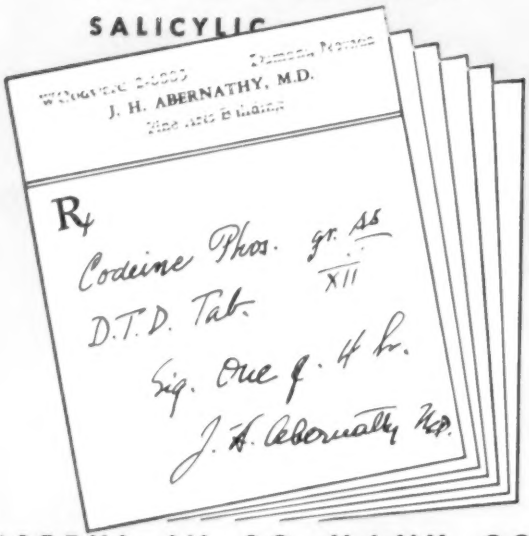

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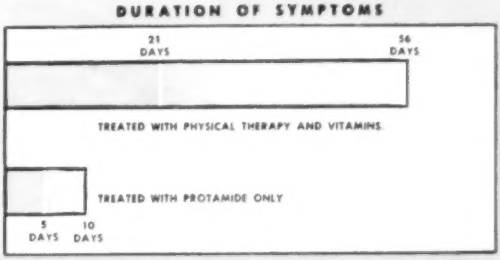

*"TREATMENT OF NEURITIS WITH PROTAMIDE"

Richard T. Smith, M.D.
Associate in Medicine and Chief of Arthritis at Jefferson Medical College and Hospital; Associate Physician and Chief of Arthritis, Pennsylvania Hospital; Director of Department of Rheumatology, Benjamin Franklin Clinic.

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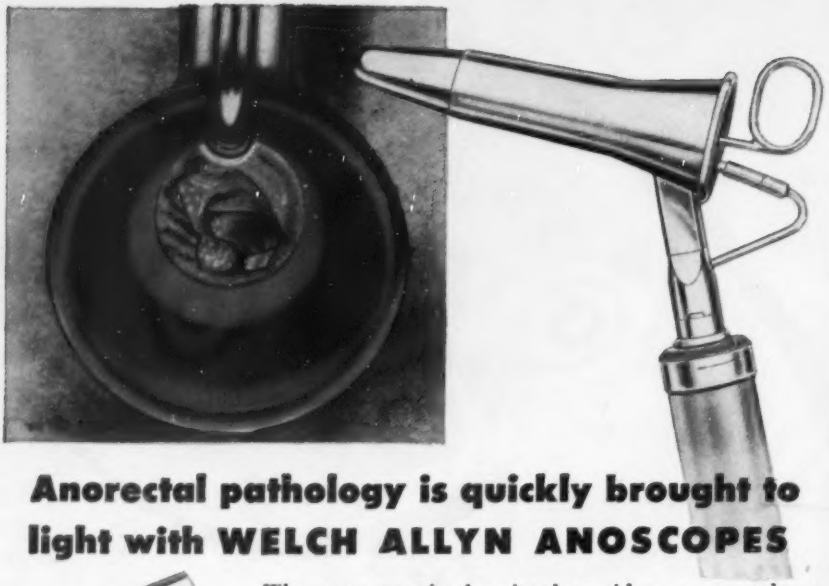

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Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

PROBLEM: A blood coagulant was administered to a patient after a tonsillectomy. It was not known that the patient was hypersensitive to the coagulant. He became cyanotic and died of edema of the glottis induced by an anaphylactic reaction. Was the physician negligent in failing to test the patient for hypersensitivity before administering the drug?

COURT'S ANSWER: No.

The U. S. District Court, Massachusetts, found from the evidence that the particular drug had been used upon thousands of patients without ill effects, the doctor in this case having used it more than one hundred times. There was no indication before operation that the patient was hypersensitive (117 Fed. Supp. 456).

PROBLEM: According to a Florida statute, a malpractice suit could not be started three years after the date when malpractice arose. Did the statute apply to a suit for malpractice started on behalf of a minor?

COURT'S ANSWER: Yes.

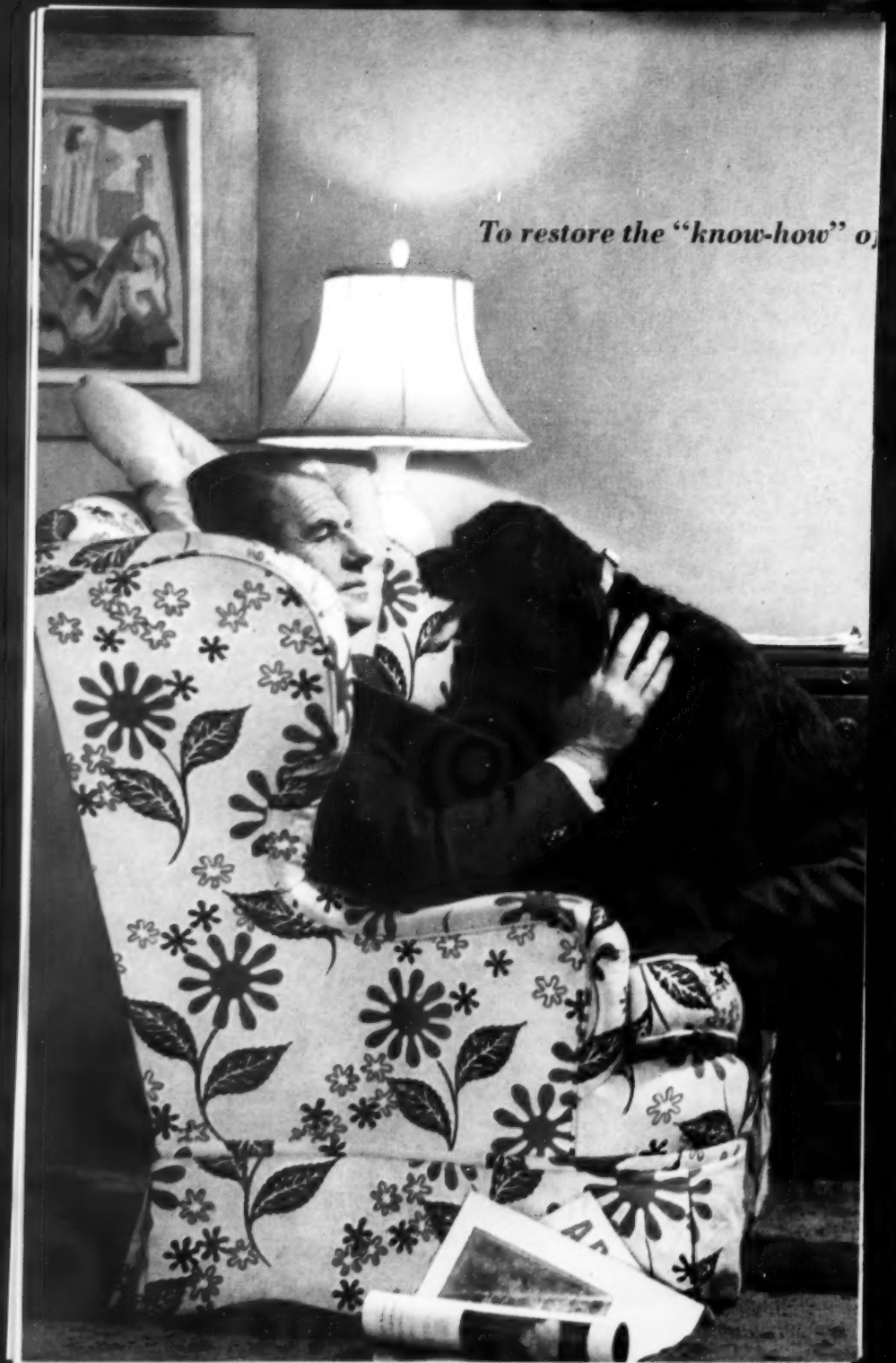
The Florida Supreme Court's decision in this case was influenced by the fact that wording in the statutes of the state did not indicate intention to permit a minor to defer suing for malpractice until of age (126 Fla. 515, 171 So. 320).

Laws on this subject vary in different states. A New York court decided that a minor could start a malpractice suit within one year after becoming of age, but that a parent could not commence suit on his own behalf to collect damages for expenses or loss of the child's services, due to the same malpractice, after two years from the date of the alleged malpractice (257 N.Y. App. Div. 845, 12 N.Y. Supp. 2d 71).

PROBLEM: Dr. G, an established physician, formed a partnership with Dr. A. The doctors agreed that Dr. A was to receive the first $200 derived from his practice, that Dr. G should receive $100 to cover office expenses, and that the excess should be divided equally. The division was made monthly on the basis of cash receipts, regardless of when services were rendered. The partnership was dissolved when Dr. A retired. Was he entitled to half of the fees for his services collected by Dr. G after the dissolution?

COURT'S ANSWER: Yes.

Dr. A contended that he was entitled to all the fees collected after dissolution. However, the Florida Supreme Court determined that the parties equitably intended that Dr. G should share in profits made by Dr. A through the use of Dr. G's office, employees, and equipment (141 Fla. 47, 192 So. 634).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*Hermann, I. F. and Smith, R. J.: Journal-Lancet 71:271, 1951.

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*Barden, F. W., Hill, P. S., Mahaney, W. F. and Cuneo, K. J.: J. Maine M.A. 45:11, 1954.

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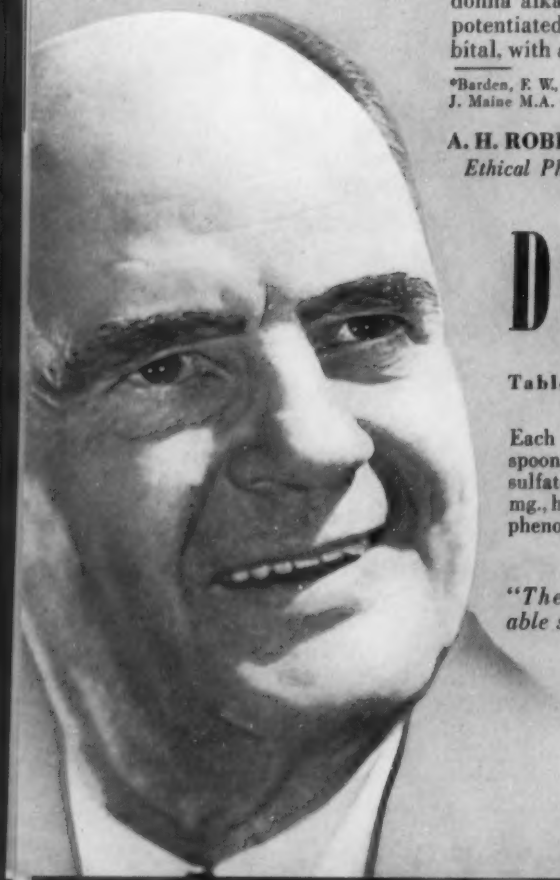

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*"There was no evidence of undesirable side reactions [with Donnatal]."**

PROBLEM: Based upon a cystoscopic examination, a doctor treated a patient for an enlarged prostate gland for two years. A later examination revealed a ½-in. tumor at the base of the bladder. On the doctor's advice, the patient was hospitalized and surgery was performed by other doctors who discovered the tumor to be malignant and incurable. Did these facts warrant a finding that the first doctor negligently treated the patient?

COURT'S ANSWER: No.

The California District Court of Appeal, First District, said that an award of $30,000 against the doctor was properly set aside and a new trial granted when evidence was insufficient to prove negligence. The court was strongly influenced by medical expert testimony to the effect that it was impossible to know how long the malignant condition had existed or how long it may take a benign condition to become malignant, and that it is impossible to make a general assumption that cancer can or cannot be cured (266 Pac. 2d 169).

PROBLEM: In a personal injury suit the defendant did not call as witnesses 2 physicians who had examined plaintiff on behalf of defendant. Could the jury and the court infer that the testimony of the doctors would have favored the plaintiff?

COURT'S ANSWER: Yes.

So decided the Minnesota Supreme Court (62 N.W. 2d 920).

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PROBLEM: A patient paid a physician for initial treatment and gave a note for further treatment. A month later when the patient called at the doctor's office, the doctor was absent because of illness. The patient never returned, seeking treatment elsewhere. Was the note collectible?

COURT'S ANSWER: No.

The Minnesota Supreme Court decided that the contract required the doctor to treat the patient and implied that he would remain physically able to do so. But the court observed that whether sickness is sufficient to release a person from an obligation depends on the circumstances of each case. In this case, when the patient called at the doctor's office he was given no assurance as to when the doctor would be able to see him. The patient was therefore free to consult another doctor (59 Minn. 406, 61 N.W. 335).

PROBLEM: The doctor of a coal mining company did not charge when he attended 2 children of a deceased miner. When the mother of the children died, could the doctor enforce a claim against her estate, of which the children were beneficiaries?

COURT'S ANSWER: No.

The Pennsylvania Superior Court applied the rule that when services are mutually understood to be gratuitous, payment cannot be enforced later (64 Pa. Super. 28).

Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

QUESTION: What effects do prolonged exposure to television have on the eyes of adolescent and preadolescent children?

M.D., Connecticut

ANSWER: *By Consultant in Ophthalmology.* At the present time we know of no pathologic changes in the visual apparatus caused by watching television. Eyestrain may result from excessive viewing of television, but that can be corrected in most instances by suitable glasses.

QUESTION: What is the significance of microscopic hematuria of low degree in both noncatheterized and catheterized urine specimens?

M.D., Washington

ANSWER: *By Consultant in Urology.* Usually, urologic examination reveals nothing when microscopic hematuria is the only manifestation of abnormality. However, since many serious lesions of the urinary tract associated with gross hematuria must pass through a stage with only microscopic hematuria, the patient should have a complete urologic investigation, including a culture of the catheterized urine, an excretory urogram or retrograde pyelograms, and a cystourethroscopic examination.

If nothing is found and the microscopic hematuria persists, the entire investigation should be repeated at least once at the end of three months.

Disorders which can cause microscopic hematuria include disturbances in the bleeding and clotting mechanism, nephritis, neoplasm, tuberculosis, and nonspecific inflammations as well as calculi. Of course, lesions usually found with so-called essential hematuria, such as varices of the papillae, small hemangiomas, and so on, should also be considered.

QUESTION: What is the proper way to manage the round ligament and hernial sac when repairing indirect inguinal hernias in female infants and children?

M.D., Wisconsin

ANSWER: *By Consultant in Pediatric Surgery.* In young females, the hernial sac usually contains ovary with or without fallopian tube and, occasionally, loops of intestine. All such viscera are rather easily reduced into the peritoneal cavity, leaving for surgical disposal only the hernial sac, the round ligament,

(Continued on page 42)

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"... in patients with pneumococcal pneumonia, surgical infections, or urinary tract infections ... oral administration ... is followed by rapid clinical response. Symptoms, including fever, largely cleared up within 24 to 48 hours."*

*English, A. R., et al. Antibiotics Annual (1953-1954). New York: Medical Encyclopedia, Inc., 1953, p. 20.

and the walls of the inguinal canal.

Years ago surgeons endeavored to dissect the round ligament from the thin, friable hernial sac. Too often the sac tore through the internal ring and complicated repair considerably. Recently, however, surgeons have stripped the intact sac and round ligament free of cremasteric fibers and loose adventitia well down through the internal ring, flush with the parietal peritoneum. The stump of the sac is then transfixed together with the round ligament by an appropriate ligature.

After the stitch is tied and excess tissue amputated, the stump of the sac, which has previously been tented up through the internal ring, usually retracts flush with the parietal peritoneum, well inside the internal ring. The inguinal canal and external ring are then obliterated by a modified Ferguson repair. The round ligament requires no special attention.

Hernias recur in 0.5% of patients.

CREDIT WHERE CREDIT IS DUE

For answers to two questions in the April 1 issue, our Consultant in Tropical Medicine referred us to Conn's *Current Therapy*. Inadvertently credit was omitted. The answer on snake bite was from Dr. Afranio do Amaral's method and the answer on bee sting from Dr. Philip M. Gottlieb's technic, as set forth in the 1952 edition of *Current Therapy*.

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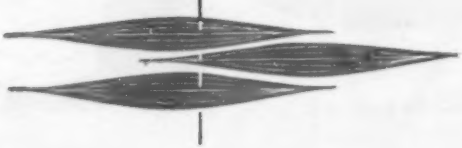

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These observations by Drs. L. S. Nelson and A. V. Stoesser are reported in "Cleansing Agents — Irritating and Non-Irritating to the Skin", published in the September-October 1953 issue of Annals of Allergy.

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Washington LETTER

Physicians Strengthen Opposition to Social Security

After years of bitter fighting with the Roosevelt and Truman administrations over health legislation, the medical profession is now in the first no-compromise battle with the Eisenhower administration — not over health bills, but over whether physicians should be made to accept coverage by Social Security. For months, behind-the-scenes efforts were made to settle the dispute, but Secretary Hobby and her advisers would not budge from their stand that coverage has to be compulsory for just about every group in the country. In their opinion the only exceptions should be certain clergymen who object on religious grounds and a few groups administratively impossible to cover.

The basic argument of Social Security officials is simple: The program is not national risk-spreading if any large groups are uncovered.

The physicians' argument also is simple: We do not need Social Security, so why force us to accept it?

The row came out into the open at the House Ways and Means Committee hearings, when Secretary Hobby testified for the administration. She said in part:

> The first conclusion that the department came to in its study of the Old Age and Survivors' Insurance program was the soundness of its basic concepts—that contributions of the workers themselves, and their employers, should support the system, and that benefits should have a relationship to the worker's past earnings.

Mrs. Hobby then explained what in the administration's opinion was wrong with the present system. First, many occupations and classes of workers are not included; second, benefit provisions are inadequate and inequitable.

The administration's position is as follows:

> We firmly believe that if all groups are brought under Old

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Age and Survivors' Insurance, so as to make it essentially a universal system, great advantages will accrue both to the individuals involved and to the nation as a whole. Coverage should be extended just as far as administratively practicable.

Dr. F. J. L. Blasingame of Wharton, Tex., a member of the Board of Trustees of the American Medical Association, spoke for the physicians. Rep. Robert W. Kean (R., N. J.), a committee member, was quick to challenge Dr. Blasingame. He told the AMA representative that a poll in his district, and several others over the country, suggested that most practicing physicians disagreed with the AMA stand. Dr. Blasingame reminded Mr. Kean that inevitably small selected groups will be found in opposition to any stand taken by a national association. This point was not resolved, but Dr. Blasingame went on to present the physicians' official viewpoint, unchallenged by any other member of the committee.

Dr. Blasingame came directly to issue with Mrs. Hobby. He stated:

> We consider it absolutely incompatible with the free enterprise system for a group to be compulsorily covered under a government system of old age benefits when that group strongly and with great force opposes such coverage. . . . We have carefully reviewed the report of the advisors to the Secretary [Mrs. Hobby] and have been unable to find any reasons to justify this part of their recommendations. I am here to assure you gentlemen that the members of the medical

profession do not feel discriminated against by having been excluded from the provisions of the Social Security Act. On the contrary, we believe that we are capable of planning for our security in old age and are not desirous of governmental intervention.

Dr. Blasingame then went on to support his arguments. He said that of all physicians who practice beyond 65 years of age—the minimum pension age under OASI—more than half do not retire until after age 74. If physicians are forced under social security, he pointed out, a high percentage of them would be paying OASI taxes for an additional five to nine years before they started drawing pensions.

In summary, he said:

> The self-employed professional differs from the employed person because he is not forced into abrupt and complete retirement, because he usually continues substantially remunerative activities after age 65, because his entire life and training emphasizes individual activity rather than group treatment.

Dr. Blasingame said that physicians and most other self-employed persons prefer to be given the right to defer income taxes on a part of their income put into annuity plans. He said that the AMA's position was supported by the American Bar Association, American Dental Association, American Institute of Accountants, and American Farm Bureau Federation.

During the House hearings, most witnesses supported the administration bill, many of them urging even more liberal benefits. However, representatives of policemen and firemen opposed the legislation. They maintain that because of the nature of their work these people generally

(Continued on page 58)

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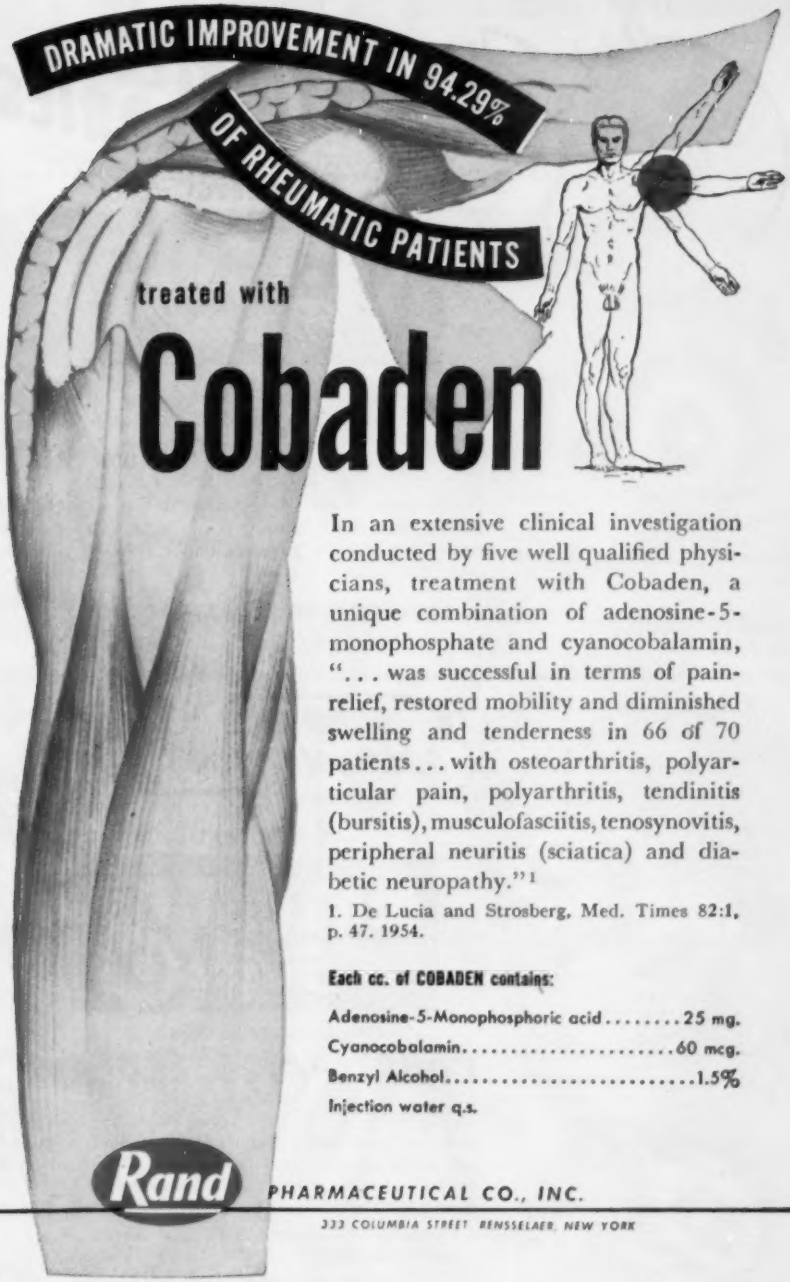

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1. De Lucia and Strosberg, Med. Times 82:1, p. 47. 1954.

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1. Cass, L. J. and Frederik, W. S.: Malt Soup Extract as a Bowel Content Modifier in Geriatric Constipation. Journal-Lancet, 73:414 (Oct.) 1953.

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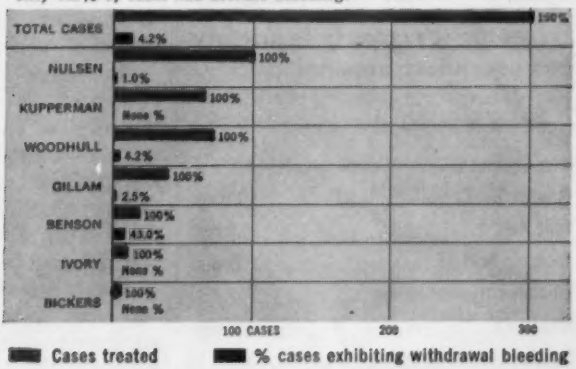

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retire long before age 65. At this a member of the committee said:

> How can we force all professionals into OASI and then exclude firemen and policemen? What disturbs me is that we propose to make an exception for one group, and not for another. It puts us in a bad position to exclude firemen and policemen, and include doctors. The only solution is to require all or to exclude all, unless they want to come in.

Strategically, that was the only advantage that developed for physicians during the House hearings. The committee was on the spot if firemen and policemen were allowed to stay out, but doctors were required to come in.

As House and Senate hearings continued, it became apparent that the original enthusiasm for the administration's reinsurance bill was fast disappearing.

First health insurance companies reported that they saw no need for the bill and would not participate in the program if enacted. Then representatives of life insurance companies, which sell some health and accident policies, told the same story. Next, American Hospital Association's spokesman breathed a little life into the bill when he said AHA would support it. But, with the hearings more than half over, AHA was the only large organization to give the plan complete support. The Blue Shield Commission voted not to endorse it, and the Blue Cross endorsement was far from complete.

AMA, like the insurance companies, could find no positive advantages in the idea, and a few threats of socialization of medical care.

When a witness appeared to rep-

(Continued on page 62)

MODERN MANAGEMENT

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†Fromer, J. L., and Cormia, F. E.: J. Invest. Dermat. 18: 1, 1952.

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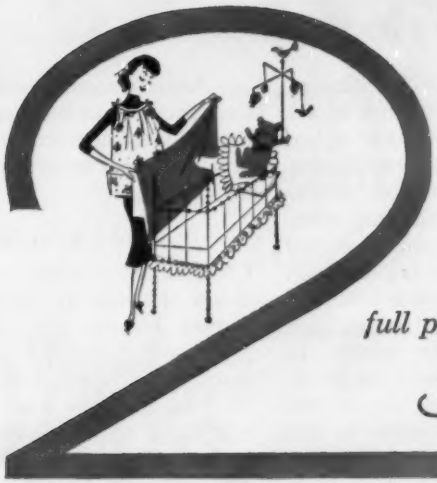

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resent the American Federation of Labor, Chairman Wolverton of the House Committee thought he at last had reinforcements for the bill. But the AFL witness, Nelson Cruikshank, had only discouraging news. He said that the Federation believed this kind of reinsurance couldn't possibly contribute toward an extension of coverage, either into high risk groups or into new benefits. In deference to the liberal tradition, however, he could not oppose the bill. He told the committee he just didn't think it would do much good.

The testimony of Dr. Paul Magnuson followed the same line. Dr. Magnuson, chairman of the Truman Health Commission and former chief medical officer of Veterans Administration, said he thought Congress would be disappointed if the bill were enacted, as the legislation could not reach the goals that had been set.

Washington Notes

¶ Not all health legislation is bogged down; the bills to expand the Hill-Burton hospital construction program into clinics and health centers is making progress, although slowly. The thought now, advanced by the AHA, is to eliminate diagnostic and treatment centers and to make rehabilitation centers and nursing homes eligible under the original act. The AHA proposal also would place high priority on hospitals for the chronically ill.

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1. Neo-Cortef* *ointment (topical)*

Each gram contains:

Hydrocortisone acetate . . . . 10 mg.
(1%) or 25 mg. (2.5%)
Neomycin sulfate . . . . . .5 mg.**
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Butyl-p-hydroxybenzoate . . . 1.8 mg.

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2. Neo-Cortef* *ophthalmic ointment*

Each gram contains:

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Neomycin sulfate . . . . . .5 mg.

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Each cc. contains:

Hydrocortisone acetate 15 mg. (1.5%)
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Supplied: 5 cc. dropper bottles

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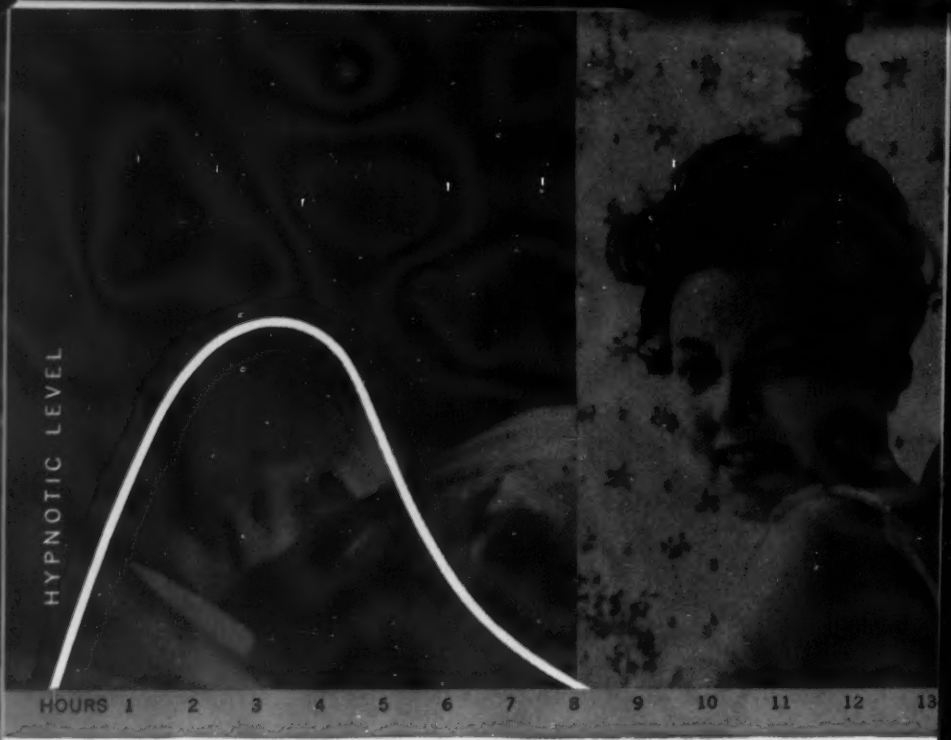

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MODERN MEDICINE
THE JOURNAL OF DIAGNOSIS AND TREATMENT

by WALTER C. ALVAREZ, *Editor-in-Chief*

On Saving Time

With the rapidly mounting costs of labor, more and more companies are trying to save the time of their highly skilled workers; they do not want these valuable men doing jobs that could be done by unskilled laborers.

Similarly, a few big surgeons in this country have at their disposal two operating rooms and two teams of assistants who first open the abdomens and later close them. The surgeon moves back and forth from room to room, performing only the expert work of removing a diseased stomach or colon or uterus.

It is unfortunate that, even in large medical institutions where efficiency experts are now beginning to put in time-saving plans, the highest paid consultants often do clerical work which could easily be performed by a high school girl. For instance, with the help of an electronic dictating machine a physician can record a good history in a quarter of the time that would be needed if he were making notes by hand. Later, a typist can take the material off the machine.

In at least one big clinic where the doctors used to spend much time writing out the many requests for laboratory and roentgen examinations and telling the patients where to go and what to do, everything now is done by girls at a central appointment desk. The instructions for the patients are printed on the envelopes in which each order is put, and definite appointments are made so that the patient will not waste an hour in one waiting room and then an hour in another.

Like a specialist in diabetes, I save myself hours of time a week by having booklets available on the several most common

diseases which I treat. These booklets were designed to give instruction and to answer the many questions that patients ask.

Certainly, all physicians should keep thinking of ways in which to save much valuable time. A very busy man should never be doing work which could be done for him by a girl.

Backache and Bone Changes

Probably every physician when confronted with a patient with severe backache and some abnormality in the roentgenogram of the lumbar spine must have wondered if he could ascribe the backache to the changes seen.

Recently, Dr. Clarence A. Splithoff *(J.A.M.A.* 152:1610-1613, 1953) reported a particularly good study of this problem in which he compared the spinal roentgenograms of a large number of persons with backache with those in a comparable group of normal persons. He also studied the literature on the subject and concluded, as others have done, that vertebral abnormalities and even an exaggerated angulation at the lumbosacral joint must be disregarded because the findings in the diseased and the control groups are not significantly different.

Headache and Hypertension

Most physicians assume that hypertensive patients have headaches because the hypertension is severe or is getting worse. Actually, for years, physicians who have made observations on this point have concluded that the headache of hypertension is not well correlated with the height of the pressures or with the rapid advancement of the disease.

I. M. Stewart *(Lancet* 265:1261-1266, 1953) has reinvestigated the subject and has gained the impression that the headaches are partly a product of anxiety. He found that 87 of 104 patients who were unaware of hypertension did not have headaches, while of 96 patients who were aware of increased pressure, 71 did have headaches.

Stewart did not find any relation between headache and the height of the diastolic pressure. The relief of headache was not well correlated with lowering of hypertension due to therapy.

Some Aspects of Bacteremia

IVAN L. BENNETT, JR., M.D., AND PAUL B. BEESON, M.D.
Yale University, New Haven, Conn.

*Invasion of the blood stream during bacterial infection has both diagnostic and prognostic significance.**

BACTEREMIAS may be classified as continuous or intermittent. Continuous bacteremia always indicates serious infection and often accompanies bacterial endocarditis, typhoid fever, and brucellosis.

Transient bacteremia almost always occurs during the onset of pneumococcal pneumonia and accounts for the precursory shaking chill. Pneumococci in the blood denote spreading infection in the lung; hence, when organisms can be grown from the patient's blood late in the disease, the outlook is not favorable.

Many transient bacteremias are the result of sudden showers of organisms into the blood stream and are of little consequence. Such episodes usually occur, without chill or fever, after manipulation of infected or contaminated tissues.

Bacteremia may be associated with instrumentation of the genitourinary tract, tonsillectomy, dental manipulations, incision of an abscess, and even normal labor. Persons known to have valvular heart disease should be adequately premedicated with antibiotics before manipulative or operative procedures which might precipitate bacterial endocarditis. Because of the type of organism likely to be encountered in the genitourinary tract, aureomycin or some similar drug is used before operations in this area.

If a patient has intermittent chills, blood for culture should be obtained one hour before the expected time of the chill or elevation in temperature. A time lag exists between the sudden influx of bacteria and the onset of a chill. The blood is often free of bacteria before the fever begins.

Arterial blood cultures are not necessary when venous blood cultures are sterile because no bacteria are removed from the blood during passage through the extremities. However, with typhoid fever, histoplasmosis, and brucellosis, culture of the bone marrow is more likely to yield a growth than is culture of the blood.

On occasion, organisms may be seen by direct observation of a stained smear of peripheral blood or the buffy coat. The procedure is most commonly useful for meningococcemia and is also of value in determination of the causative organisms in histoplasmosis and relapsing fever.

Bacteremias caused by *Clostridi-*

*Bacteremia: a consideration of some experimental and clinical aspects. Yale J. Biol. & Med. 26:241-259, 1954.

um welchii may be recognized by rapidly developing icterus, hemoglobinuria, and severe anemia. Bacteremia from other infecting organisms does not cause hemolysis or other signs of rapid blood destruction.

With the exception of brucellosis, the demonstration of specific antibody against an organism at a time when that bacterium is cultured from the blood is pathognomonic of endocarditis.

Spontaneous bouts of bacteremia occur in some patients with Laennec's cirrhosis as a result of organisms that normally inhabit the intestine, usually colon bacilli. This phenomenon may be the result of impaired function of the reticuloendothelial system or may be caused by portal hypertension with the development of shunts around the liver. Blood containing bacteria fails to pass through the organ and bacteremia occurs.

Diphtheroids have been cultured from the blood of patients with periarteritis nodosa, malignant lymphoma, and other chronic febrile disorders; thus, diphtheroids in a culture should suggest these diagnostic possibilities.

Rather than immediate administration of penicillin or some other antibiotic intravenously for bacteremia, therapy should be directed at the primary focus of the disease.

¶ RESPIRATORY INFECTIONS may be effectively treated by inhalations of dry dihydrostreptomycin dust. The inhalations are superior to dry penicillin aerosols, believe Mary Karp, M.D., and associates of Wesley Memorial Hospital and Northwestern University, Chicago. Undesirable reactions are slight and occur among less than 2% of persons. Moderate or excellent improvement was obtained by 125 bronchiectatic patients given 1 or more ten-day courses of treatment. A disposable plastic inhalator containing 50 mg. of the antibiotic is suitable for office treatment.

Dis. of Chest 25:278-284, 1954.

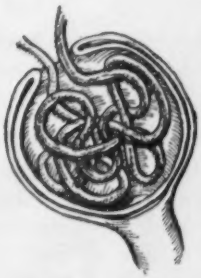
¶ ACUTE CARDIAC SYMPTOMS may be precipitated by physical or emotional strain in patients with coronary atherosclerosis. Complete recovery from the myocardial damage may occur and permit continued full employment, but Louis H. Sigler, M.D., of Brooklyn finds that partial or total disability sometimes ensues. Extent of disability is determined by the degree of coronary disease, the extent of residual permanent myocardial injury, and the functional capacity of the heart. A second acute coronary attack with myocardial injury, occurring during usual activity after complete recovery, cannot be attributed to the original stress but is a spontaneous insult in the course of progressive coronary degeneration.

J.A.M.A. 154:294-299, 1954.

Prognosis with Glomerulonephritis

NORMAN M. KEITH, M.D., AND HOWARD M. ODEI., M.D.
Mayo Clinic, Rochester, Minn.

*Patients with acute glomerulonephritis usually recover satisfactorily; the outlook with lipoid nephrosis or chronic glomerulonephritis is serious, but not as hopeless as once believed.**



ACUTE glomerulonephritis is frequently a self-limiting disease, seldom recurs, and apparently does not necessarily increase the susceptibility of the patient to subsequent chronic cardiovascular lesions.

A small but significant number of patients recover from chronic lipoid nephrosis.

Ordinarily, chronic glomerulonephritis is described as having a latent period of varying length after the subsidence of edema, which is then followed by cardiovascular involvement and progressive uremia; however, several exceptions occur. Lipoid nephrosis and chronic glomerulonephritis may persist from one to several decades. Rarely, patients with both the edematous and dry type of chronic glomerulonephritis recover.

Acute hypertension, frequently observed with acute glomerulonephritis, may also occur with chronic glomerulonephritis and may subside and recur. A serious form of hypertension is frequently associated with terminal uremia. Hypertension in some cases is alleviated by surgical sympathectomy or hexamethonium. Long-continued benign hypertension may also be associated with chronic glomerulonephritis. The variations of the hypertension with chronic glomerulonephritis in regard to time of onset, severity, and course, raise speculation as to etiology and indicate multiple causative factors.

Management of the edema with glomerulonephritis continues to be difficult. In some cases the swelling is periodic and proteinuria and hypoproteinemia do not appear during the edema-free period. Procedures of therapeutic value for renal edema include a diet with control of the intake of sodium chloride and protein, intelligent use of diuretics and plasma expanders, induction of peritoneal and pleural paracenteses, and administration of cation-exchange resins and corticotropin and cortisone.

*Outlook for patients with glomerulonephritis. J.A.M.A. 153:1240-1245, 1953.

Diagnosis of Histoplasmosis

JOHN A. PRIOR, M.D., SAMUEL SASLAW, M.D.,
AND CLARENCE R. COLE, D.V.M.
Ohio State University, Columbus

Infection with Histoplasma capsulatum *is probably common, but mortality rate is relatively low.**

In the upper midwestern United States, histoplasmosis occurs frequently. Endemic centers coincide with the regions of high incidence of pulmonary calcifications and histoplasmin skin reactions.

A positive reaction to the histoplasmin skin test shows that the patient, at some time, has been infected with *Histoplasma capsulatum* but does not differentiate between active and former disease. Active infection is more strongly suggested when a young child reacts positively or a previous negative reaction of an adult is reversed. On the other hand, the reaction of more than half of persons with severe infections is negative. When a positive reaction is elicited, no further skin tests should be performed since results of serologic tests may become falsely positive.

H. capsulatum may be disseminated by sputum, feces, saliva, and vomitus. Air-borne infections may be caused by fungi spores. Whether infected animals form a reservoir for the disease in man is unknown.

Histoplasmosis ranges in severity from slight illness lasting a few days or weeks to acute and fulminating fatal disease. Symptoms include irregular fever, weight loss, cachexia, anorexia, nausea and vomiting, diarrhea, cough, mucosal ulcerations, and pneumonia refractory to all antibiotics. Hepatomegaly may occur with splenomegaly and lymphadenopathy. Leukopenia and anemia are common with advanced histoplasmosis.

The disease occurs most frequently among the young or elderly and after the age of 10 years is more common among males.

A presumptive diagnosis can usually be made by serologic methods. The *Histoplasma* collodion agglutination and the yeast-phase complement-fixation tests become positive in the second to fourth weeks of the disease and may become negative from the third to eighth month. The reaction to the complement-fixation test may remain positive in low concentrations for a year or more; hence, differentiation between disease convalescence and nonspecific reaction is difficult. Again, with fulminating disease, reactions to both tests may be negative.

H. capsulatum may be recovered from the blood, bone marrow, and biopsy material. Gastric and bronchial aspirates have also been used. When the organism can be cultured

*Experiences with histoplasmosis. Ann. Int. Med. 40:221-244, 1954.

in brain-heart infusion agar containing penicillin and streptomycin to inhibit bacterial contaminants, a definite diagnosis can be made. Growth may be seen as early as the tenth day or not until the eighth week.

Treatment is largely supportive, sulfonamides and antibiotics being ineffective. Ethyl vanillate may control the infection but is quite toxic and difficult to administer. The effectiveness of Atabrine is being investigated.

Health Hazards of Insecticides

DON W. MICKS, SC.D., UNIVERSITY OF TEXAS, GALVESTON, notes that the phenomenal development and extensive use of insecticides to combat the more than 85,000 kinds of insects, ticks, and mites that are injurious to plants, animals, and man in this country have increased the hazards of accidental poisoning. However, the benefits derived from the use of the new poisons far outweigh the dangers, chiefly inherent in careless and improper handling.

During the past ten years approximately 10,000 pesticides have been registered in California alone. In the fiscal year 1951-52, more than 800 new registrations for such products were listed by the Texas Department of Agriculture.

Insecticides may be divided into 2 major groups: chlorinated hydrocarbon compounds, of which DDT was the first, and organic phosphate compounds. The latter, developed in Germany during World War II, do not possess the long-lasting, residual properties typical of the chlorinated hydrocarbons.

Patients acutely ill from chlorinated hydrocarbon poisoning are easily recognized. Symptoms include nausea and vomiting, hyperirritability, and lack of muscular coordination, all of which may precede convulsions and death. Recognition of chronic poisoning is more difficult; diagnosis should be based on verified exposure and neurologic manifestations. Headache, general malaise, and loss of appetite and weight may be noted.

Since no specific antidote for poisoning from the chlorinated hydrocarbons exists, treatment is symptomatic.

The organic phosphate insecticides such as hexaethyltetraphosphate (HETP) cause anorexia, nausea, vomiting, abdominal cramps, sweating, salivation, restlessness, and anxiety. Extensive exposure produces diarrhea, pinpoint pupils, blurred vision, respiratory embarrassment, and death.

Atropine, supplemented by gastric lavage, is used to treat poisoning from any organic phosphates.

Potential health hazards of organic insecticides. Texas State J. Med. 50:148-153, 1954.

Report of Mushroom Poisoning

CHARLES M. GROSSMAN, M.D., AND BARNEY MALBIN, M.D.
University of Oregon and Holladay Park Hospital, Portland, Ore.

*A previously undescribed species of mushroom has recently caused poisoning of 2 persons.**

SEVERE poisoning by mushrooms is generally attributed to *Amanita phalloides* even when the fungus is not identified. However, 2 cases of poisoning by *Galerina venenata* Smith, a previously undescribed specimen of the genus *Galerina*, occurred in Oregon, where *A. phalloides* has never been found.

Symptoms of nausea, vomiting, and diarrhea began ten hours after the patients ate mushrooms. Though one vomited much of the poisonous food and was not gravely ill, the other had severe damage in the gastrointestinal, renal, cardiovascular, hepatic, and central nervous systems. Despite pronounced derangement of liver function, prolonged coma followed by a psychotic period, and severe pulmonary edema, the patient recovered.

Treatment consisted of intravenous salt, water, and glucose and subcutaneous phenobarbital and atropine. Nothing was given by mouth. When paralytic ileus, unusual in mushroom poisoning, developed, a Miller-Abbott tube and Prostigmin were employed. Aureomycin and vitamin K were added to the regimen later. Digitoxin and oxygen by tent with tourniquets to all 4 extremities were used for the pulmonary edema.

Symptoms of the more common *A. phalloides* mushroom poisoning are also delayed, appearing six to fifteen hours after ingestion. The initial manifestations are sudden, severe abdominal pain, nausea and vomiting, and usually diarrhea. The vomitus and stools often contain blood and mucus.

The patient may have extreme thirst and anuria. Jaundice usually appears in two or three days followed by cyanosis and coldness of the extremities. Increasing prostration leads to coma and death, usually from the fifth to eighth day.

General supportive measures, including fluid and electrolyte management, are the only available therapy for this type of mushroom poisoning. Formerly, from 50 to

*Mushroom poisoning: a review of the literature and report of two cases caused by a previously undescribed species. Ann. Int. Med. 40:249-259, 1954.

70% of patients died. Increased understanding of salt and water metabolism and refined intravenous therapy have improved the prognosis.

More rapid and less severe poisoning is produced by *A. muscaria.* Symptoms appear from within a few minutes to three hours after ingestion. The chief features are excessive salivation and lacrimation, contracted pupils not reacting to light or accommodation, nausea and vomiting, abdominal pains with profuse watery evacuations, and slow and irregular pulse. In severe cases, dizziness and confusion, convulsions, and coma occur. Fatal cases terminate in a few hours.

Prognosis of *A. muscaria* poisoning is good when the disease is slight or is treated with atropine.

Test of Bacterial Sensitivity

S. STANLEY SCHNEIERSON, MOUNT SINAI HOSPITAL, NEW YORK CITY, describes a simple, rapid, disk-tube method for determining the antibiotic susceptibility of several potentially pathogenic species of bacteria.

Resistance of *Escherichia coli, Aerobacter aerogenes, Klebsiella pneumoniae, Proteus, Pseudomonas aeruginosa, Salmonella, Shigella, Staphylococcus,* and *Streptococcus faecalis* to antimicrobial agents is increasing. Since strains differ in susceptibility, standard tables are not reliable.

To test sensitivity by the disk-tube method, the organism is isolated in liquid medium or on solid media. If the latter is used, a loopful of bacteria is suspended in 2 cc. of saline and shaken vigorously.

The test medium is 3 parts sterile fresh meat extract broth, *p*H 7.2, and 5 parts distilled water. A uniform 1:1,000 suspension of organisms is prepared as follows: First, 0.1 cc. of the original isolate in liquid medium or of prepared bacterial suspension in saline is mixed with 0.9 cc. of test medium. Then, 0.1 cc. of this mixture is added for every 9.9 cc. of dilute broth and shaken well. Next, 2 cc. of the seeded broth is transferred to each of the required number of small, sterile, plugged test tubes. Antibiotic disks of appropriate strength are removed from the vials with a flamed, then cooled forceps and dropped into the proper tubes.

The tubes are incubated at 37° C. until the control tube, containing seeded broth but no antibiotic disk, shows definite visual growth. Incubation time is generally four to six hours. All tubes are inspected for growth. Inhibition of the test organism by a particular concentration of antibiotic is indicated by lack of growth in the tube.

A simple rapid disk-tube method for determination of bacterial sensitivity to antibiotics. Antibiotics & Chemother. 4:125-132, 1954.

Peptic Esophagitis

ASHER WINKELSTEIN, M.D., BERNARD S. WOLF, M.D.,
MAX L. SOM, M.D., AND RICHARD H. MARSHAK, M.D.
Mount Sinai Hospital, New York City

*Prolonged duodenal or gastric ulcer combined with esophageal symptoms suggests an apparently uncommon disease, peptic esophagitis.**

ACTION of pepsin and hydrochloric acid on susceptible mucosa is the cause of peptic esophagitis. The disease is seen predominantly in older men.

Dysphagia apparently is the most constant and important symptom of fully established peptic esophagitis and is manifested as difficulty in swallowing solids and, eventually, even liquids. Heartburn may precede dysphagia. Regurgitation or vomiting of sour fluid with or without food is common. Additional symptoms include substernal pain, loss of weight, and hemorrhage. Most patients have hyperchlorhydria.

Major complications of the disease include stenosis, hemorrhage, and perforation. Hemorrhage appears as hematemesis.

Roentgenologic findings consist of changes in distensibility or narrowing of the lower third of the esophagus and alterations in the mucosal pattern. With severe disease, the lack of distensibility may be so pronounced as to produce a long segment of considerable narrowing involving the lower third of the esophagus.

The junction between the slightly dilated esophagus above and the narrowed portion below is gradual and symmetric. The mucosal pattern throughout the narrowed segment is distorted and may have a hazy, irregular appearance. The involved segment usually shows no peristaltic activity. A very small, tent-like traction hiatus hernia may be seen. Roentgenologic findings are considerably fewer in persons with slight inflammatory changes.

Severe edema and congestion of the affected membrane are observed by an esophagoscopic examination. Multiple small superficial ulcerations may occur on the surface of irregular folds. Narrowing of the lumen in the lower esophagus can usually be traversed by the esophagoscope. Extreme constriction, however, may be impassable.

Microscopic features in the early phases include epithelial necrosis, epithelial hyperplasia, a hyaline mucosal zone splitting the superficial epithelial layer, polynuclear infiltration, and hypertrophy of the muscularis mucosae. In the advanced stage of the disease, petechial hemorrhages, erosions, infiltrations, epithelial proliferation, and, finally, fibrosis and stenosis are seen.

*Peptic esophagitis with duodenal or gastric ulcer. J.A.M.A. 154:885-889, 1954.

Therapy should include the conventional Sippy type, with anticholinergic drugs and alkalies. Mechanical dilatation may be needed.

Operative procedures have been disappointing. Theoretically, resection of the lower esophagus and upper half of the stomach with bilateral vagotomy and esophagogastrostomy appears to be logical in selected cases.

The differential diagnosis includes cardiospasm and carcinoma; biopsy must be made in the latter case.

Other types of esophagitis in which peptic activity is probably significant are [1] esophagitis with marginal ulceration at the cardia secondary to a hiatus hernia, [2] esophagitis from severe repeated vomiting, [3] esophagitis due to prolonged esophageal intubation or to frequent gastric lavages, [4] esophagitis occurring after an operation in which the esophagus is anastomosed to the stomach, and [5] solitary peptic ulcer of the lower esophagus.

Blood Phenylbutazone Level

ENA BRUCK, M.B., MICHAEL E. FEARNLEY, M.D., I. MEANOCK, M.D., AND H. PATLEY, M.D., WEST LONDON HOSPITAL, HAMMERSMITH, ENGLAND, find that suppression of symptoms of rheumatoid arthritis is greatest when the blood phenylbutazone level is between 5 and 10 mg. per 100 cc. Once an adequate therapeutic level has been reached, any significant reduction in blood phenylbutazone often leads to relapse.

A striking correlation exists between the frequency of toxic effects and the blood phenylbutazone value. When the level is above 10 mg. per 100 cc., amelioration of symptoms ceases and the incidence of toxic effects increases greatly; administration of phenylbutazone must often be stopped. Toxic effects include epigastric pain, vomiting, dry mouth, buccal ulceration, edema, urticaria, diarrhea, headache, purpura, and precipitation of oliguria and renal failure. The occurrence of severe toxic effects does not preclude further treatment since therapy may be resumed in some cases with a lower dosage after the side reactions subside. When blood phenylbutazone ratio is below 5 mg. per 100 cc., few toxic effects occur but few patients are relieved of symptoms.

Variations in the blood phenylbutazone level among patients on a fixed dosage of oral phenylbutazone are considerable; therefore, a dosage which will ensure a therapeutic effect in most patients cannot be formulated. Treatment should be started with 200 mg. daily and increased by 100 mg. daily if the response is unsatisfactory. When dosage is greater than 400 mg. a day, chances of a severe toxic effect increase rapidly.

Phenylbutazone therapy. Lancet 266:225-228, 1954.

Management of the Duodenal Stump

CLAUDE E. WELCH, M.D., AND GRANT V. RODKEY, M.D.
Massachusetts General Hospital and Harvard University, Boston

*Catheter duodenostomy and simultaneous jejunostomies for gastric decompression and jejunal alimentation can be safely utilized when primary closure of the duodenum after partial gastric resection is difficult or dangerous.**

THE removal of large duodenal ulcers from the posterior wall may result in damage to the pancreas and postoperative pancreatitis, division or ligation of the common bile duct, or ineffective closure of the duodenal stump. Since the hazards of duodenostomy have been largely overcome, the procedure should be used when other methods of controlling a duodenal stump are risky.

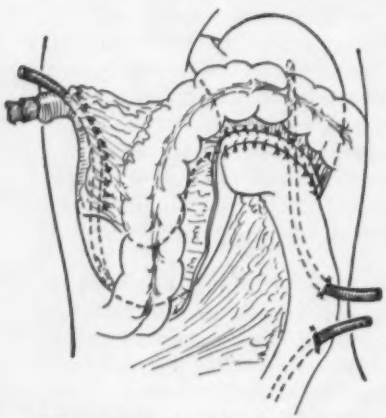


Fig. 1. Technic of duodenostomy

After gastrectomy and gastrojejunostomy for ulcer are performed, a catheter is sutured snugly into the open duodenum, which is then closed about the catheter. A cigaret wick drain and the catheter are brought out through a right subcostal incision. A double jejunostomy is done; 2 catheters are passed proximally into the stomach pouch, distally into the jejunum (Fig. 1).

Dissection should be carried out as short a distance as possible beyond the pylorus to avoid pancreatic damage and to ensure a longer duodenal section for closure about the catheter.

A No. 16 whistle-tip catheter is used. Too soft a catheter kinks easily. A sinus tract produced by a larger catheter takes longer to close, while a smaller one may be occluded by the sutures.

Purse-string or plicating sutures are used to obtain the necessary water-tight duodenal closure. Omentum may be applied about the stump closure and catheter for additional safety. The suture line is tested by occluding the distal duodenum with a finger and irrigating the catheter with salt solution. Leakage is most likely at the posterior margin of a duodenum densely adherent to the pancreas.

*A method of management of the duodenal stump after gastrectomy. Surg., Gynec. & Obst. 98:376-379, 1954.

The cigaret wick is an added precaution in case the catheter is inadvertently withdrawn too soon.

The catheter is brought out through a right subcostal stab wound when a vertical incision for opening the abdomen has been used and out through the lateral end of a transverse incision.

Fluid and electrolyte losses from the duodenal fistula usually can be corrected by intravenous administration. However, a double jejunostomy aids in handling the fistula and serious fluid and electrolyte losses if the anastomosis stoma is obstructed postoperatively.

After surgery, the duodenostomy tube is drained into a floor bottle for two days. As soon as intestinal peristalsis can be heard, the catheter is connected to the lower jejunal catheter by a glass tube to allow complete absorption of duodenal contents (Fig. 2). When peristalsis is delayed, an air vent in the duodenal catheter at the level of the duodenum decreases fluid loss.

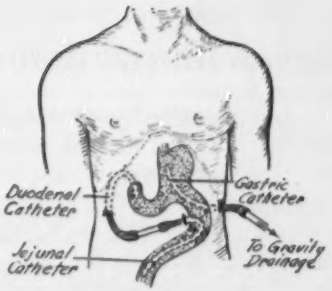


Fig. 2. Connection of catheters

The duodenostomy catheter can usually be clamped off on the eighth postoperative day and removed forty-eight hours later. Drainage ordinarily ceases almost immediately. The catheters in the jejunum and the cigaret wick are removed the next day and the patient can be discharged shortly thereafter.

If postoperative complications occur, tube removal is postponed. In the event of stomal obstruction, the catheters are retained until barium studies show adequate function of the anastomosis.

¶ **BRONCHOGENIC CARCINOMA** is more apt to be peripherally located and to have a rapid terminal course in young men than in older persons. While the average duration of life from onset to death among 30 men less than 40 years old was fourteen months, Augustus E. Anderson, M.D., and associates of the Veterans and Charity hospitals and Tulane University of Louisiana, New Orleans, consider more noteworthy the mean value of 7.5 months and the survival for more than a year of only 25% of the subjects. Metastases to the central nervous system had occurred in 7 cases before examination, foci of tumor had appeared in peripheral lymph nodes in 8, and the neoplasms were resectable for only 6 of 14 patients subjected to exploration. Histologically, 11 adenocarcinomas, 11 undifferentiated masses, and only 5 squamous-cell cancers were identified in 27 subjects.

Am. J. Med. 16:404-415, 1954.

Revascularization of the Myocardium

AARON N. GORELIK, M.D., AND SIMON DACK, M.D.
New York City

*Cardiopericardiopexy may be successfully employed to revascularize the myocardium in cases of coronary or rheumatic heart disease.**

WHEN more conservative therapy proves ineffective, cardiopericardiopexy, which unites the myocardium to the pericardium by the production of granulomatous adhesive pericarditis, often restores the patient with advanced rheumatic heart disease or severe coronary insufficiency to active life.

The procedure converts an ischemic myocardium to a hyperemic myocardium by the introduction of magnesium silicate into the pericardial sac. A foreign body inflammation of the pericardium, myocardium, and adjacent mediastinal tissues is thus produced.

The foreign body reaction and hyperemia stimulate opening of the intercoronary anastomotic channels in the myocardium and also the growth of the telae arteriae adiposae. The generalized adhesive granulomatous pericarditis stimulates the formation of new collateral blood vessels between the pericardium and mediastinal tissues and the myocardium.

In attempting to revascularize the myocardium, early operation is desirable to avoid extensively diseased and fibrosed myocardium and blood vessels. Also, although myocardial hyperemia and fibrinous pericarditis occur immediately, the formation of new collateral blood vessels requires twenty-one days.

The indications for cardiopericardiopexy include [1] arteriosclerotic heart disease with coronary insufficiency accompanied by angina pectoris or congestive failure, [2] hypertensive heart disease with cardiac hypertrophy and myocardial failure, and [3] rheumatic heart disease with single or multiple valvular involvement not suitable for commissurotomy.

Of a group of 18 patients with advanced rheumatic heart disease with congestive failure, 4 died at operation. Of the remaining 14 patients, all but 2 improved moderately or considerably as manifest by increased exercise tolerance and diminution or complete disappearance of heart failure. The apparently high mortality rate may in part reflect the fact that over half the patients were complete invalids in advanced stages of congestive heart failure.

With rheumatic heart disease, the myocardial branches of the coronary arteries may be narrowed to a greater or lesser extent, simulating

*Revascularization of the myocardium by cardiopericardiopexy. J. Internat. Coll. Surgeons 21:167-174, 1954.

arteriosclerosis and leading to ischemia of the myocardium. The myocardium also is frequently damaged by recurrent rheumatic myocarditis. Therefore, cardiac failure with rheumatic heart disease may be due to the myocardial ischemia secondary to coronary insufficiency and to myocardial damage as well as to the mechanical effects of the valvular lesions.

Cardiopericardiopexy was performed for 47 patients with severe coronary insufficiency. Almost half the patients were completely disabled because of anginal pain and dyspnea, and the remainder were limited in activities. Previous myocardial infarction was apparent in over half the cases, severe cardiac enlargement in one-third, and chronic congestive failure in about one-sixth.

All the patients surviving the operation were able to resume normal or only slightly curtailed activities without anginal pain or dyspnea. Results were excellent for 19 patients and good for 14; in 7 cases the follow-up period was too short for evaluation. Three patients died during or soon after operation, and 4 patients in the follow-up period.

Cardiopericardiopexy is not performed if a patient has [1] acute heart failure not benefited by medical treatment, [2] active or acute coronary disease as proved by acute changes in serial electrocardiograms, leukocytosis, or increased sedimentation rate, or [3] severe renal damage or renal insufficiency.

¶ INTESTINAL INTUBATION OF INFANTS is effectively accomplished with a No. 8 polyvinyl tube of modified Harris design. The device, described by Herman J. Sugarman, M.D., and Orvar Swenson, M.D., of the Boston Floating Hospital for Infants and Children, has a larger lumen and smaller external diameter than rubber catheters. The plastic tubing may be sterilized by boiling but not by autoclaving. Construction is simple, requiring only a 3-ft. length of polyvinyl tubing, a small rubber finger cot, 0.5 to 1 cc. of mercury, No. 000000 braided silk, and a 15-gauge needle.

Arch. Surg. 68:237-240, 1954.

¶ SEVERE BURNS AND SHOCK of traumatic, obstetric, or surgical origin may be treated satisfactorily with polyvinylpyrrolidone (PVP), a plasma volume expander. Within one to eight hours after infusion of 1,000 to 3,000 cc. of a 3.5% solution of PVP, John W. V. Cordice, Jr., M.D., and John Scudder, M.D., of Harlem Hospital and Columbia-Presbyterian Medical Center, New York City, observed recovery from shock, decreased hematocrit concentration and acid toxicity, and increased urinary output in all of 224 patients. Blood and plasma were combined with the expander in 138 cases.

New York J. Med. 54:652-658, 1954.

Hirschsprung's Disease

ORVAR SWENSON, M.D.
Tufts College, Boston

*Narrowing of the rectum and rectosigmoid with pronounced dilatation of the sigmoid, demonstrated by roentgenograms, is pathognomonic of Hirschsprung's disease.**

CONGENITAL absence of the ganglion cells of Auerbach's plexus of the colon, resulting in a defective pelvic parasympathetic system, is known as congenital megacolon, or Hirschsprung's disease. The internal sphincter, rectum, and rectosigmoid are always affected. Rarely does the defect extend beyond the sigmoid, a congenital malformation of the vagal fibers to the colon being responsible for this more extensive abnormality.

Ganglionic cells are large cells with finely granular cytoplasm, large nuclei, and prominent nucleoli, observed in clusters between the circular and longitudinal muscle layers. Special stains are not needed to demonstrate these cells; hematoxylin or eosin stain is quite adequate for the purpose. Frozen sections of colon wall removed at the time of surgery can be studied to assure removal of all the aganglionic intestine.

Because the ganglion cells are lacking, peristalsis does not occur in the affected segment of bowel. Intestinal stasis is the eventual result. Constipation resulting from bad habits or psychogenic factors starts at 2 to 3 years of age. With megacolon, constipation begins at birth.

Nearly all patients with Hirschsprung's disease have abdominal distention, which rarely is seen with the psychogenic variety of constipation. The rectum is empty in cases of megacolon and impacted with other forms of constipation.

Barium enema studies are necessary to establish the diagnosis of Hirschsprung's disease. To visualize the rectosigmoid clearly, only a small amount of barium should be injected. The patient is placed in a lateral or oblique position.

The pathognomonic observation is narrowing over a distance of 8 to 10 cm. with significant dilatation above. A slight narrowing, 2 to 3 cm. in length, in some portion of the sigmoid, with dilatation of the colon above and below, is not sufficient for a diagnosis of megacolon nor is simple dilatation of the colon, which can occur with chronic constipation. However, an inability to empty the colon, as seen in a post-evacuation roentgenogram, is an important confirmative indication of megacolon.

Treatment consists of resection of the aganglionic rectum and rectosigmoid with a pull-through type

*Modern treatment of Hirschsprung's disease. J.A.M.A. 154:651-653, 1954.

of anastomosis, leaving the internal sphincter intact. All affected bowel should be resected to prevent a recurrence. The operation is difficult and must be performed with precision.

Postoperatively, the patients are likely to have diarrhea for several weeks, but this gradually subsides. Laxatives are not needed, and a normal urge to evacuate the colon appears. The abdominal distention gradually disappears in eight months to a year.

Detection of Hepatic Metastases

ERIC T. YUHL, M.D., AND LLOYD A. STIRRETT, M.D., VETERANS ADMINISTRATION CENTER AND UNIVERSITY OF CALIFORNIA, LOS ANGELES, report that hepatic radioactivity surveys are very accurate for the diagnosis of carcinomatous liver metastases.

Radioiodinated human serum albumin is injected intravenously and a scintillation counter is used to detect gamma radiation. Successive counts are made at coordinated points over the thorax and abdomen. Higher counts than normal over the liver area are usually suggestive of metastases at that point. Lesions of less than 2 cm. in diameter may be missed. While sites of primary tumors elsewhere in the abdomen do not cause increased counts, metastatic areas in the peritoneal cavity other than the liver may also yield high values.

The radioactivity survey was performed on 187 patients with proved primary neoplasms. Hepatic metastases were excluded by inspection and palpation of the liver after laparotomy, microscopic examination of biopsy material, and careful postoperative evaluation. Of the preoperative surveys, 181 were entirely negative.

Of 53 patients with proved hepatic metastases, the condition was diagnosed in 49 before surgery through the use of radioiodinated albumin, an accuracy of 93%. The condition could be diagnosed preoperatively by routine methods of investigation in only 11 of these 53. Liver function tests were only 43% accurate.

False positive results may occur with inflammatory processes in the liver. Of 28 patients with benign liver disorders, radioactivity was normal for each of 14 patients with cirrhosis without ascites. However, foci of increased radioactivity were observed in 6 of 8 patients who had cirrhosis with ascites. Assay of ascitic fluid samples revealed a high concentration of radioactivity. Of 6 patients with acute hepatitis, 2 had abnormal values. However, after subsidence of the acute phase, results were normal. Inflammatory lesions elsewhere in the abdomen, such as active peptic ulcer, also may give false positive results.

Clinical evaluation of the hepatic radioactivity survey. Ann. Surg. 38:857-862, 1953.

Problems of Gallbladder Surgery

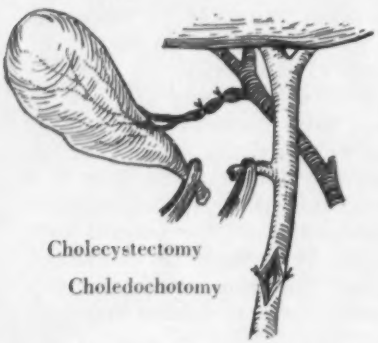
BENJAMIN F. LOUNSBURY, M.D.
Northwestern University, Chicago

*Cholecystectomy should be done for acute or chronic cholecystitis unless adverse reasons are strong.**

BILIARY surgery usually yields excellent results. Poor results can be obviated if the problems related to treatment of acute and chronic cholecystitis, exploration of the common duct, and dangers of gallbladder surgery are understood.

ACUTE CHOLECYSTITIS

Impaction of a stone in the cystic duct generally initiates the acute process. Bile cannot flow from the gallbladder and subsequent edema of the walls compresses the cystic vessels. Gangrenous areas arise within forty-eight hours in 5 to 10% of affected gallbladders. The initial inflammation is ordinarily chemical but an invasive infection is superimposed in two or three days and intraluminal abscesses form. Occasionally, the gallbladder perforates and peritonitis or peritoneal abscesses may develop.



Cholecystectomy
Choledochotomy

The signs and symptoms do not reflect the severity of the underlying process in acute cholecystitis. The patient may vomit once or twice.

Icterus practically never appears, at least not in uncomplicated cases. Fever is only moderate and leukocytosis is generally under 18,000. However, pain occurs in the right upper quadrant, tenderness in the gallbladder area is pronounced, and occasionally a tense, large organ may be felt.

Cholecystectomy is the preferred operation. If this procedure is technically infeasible or the patient is aged or debilitated, cholecystostomy using local anesthesia may be substituted.

For cholecystectomy, a transverse incision carried medially just into the left rectus sheath and laterally well into the oblique musculature lateral to the edge of the right rectus sheath is preferred because of the small incidence of hernia, postoperative pain, and unsightly scar formation. Even seventy-two hours after onset of symptoms, surgery can be performed, since infections may be controlled with antibi-

*Special problems in gallbladder surgery. S. Clin. North America 34:137-149, 1954.

otics. A delayed, elective procedure is often hazardous because firm adhesions can develop. Often, during an acute attack, the edema and friability of tissues make operation difficult. Cholecystostomy may then be substituted for cholecystectomy.

CHRONIC CHOLECYSTITIS

If gallbladder disturbances occur repeatedly, cholecystectomy should be performed. Thorough examination, including roentgen studies, will eliminate peptic ulcer and kidney and colonic disorders as causes of the distress. Roentgenologic evidence of cholelithiasis or 1 or more acute attacks are also indications for surgery.

Individuals having only poor dye concentration or delayed emptying of the gallbladder should be treated conservatively and films should be made at intervals of several months.

COMMON DUCT EXPLORATION

The common duct should be explored if any of the following conditions exist:

- Jaundice before or at the time of operation
- A palpable stone in the common duct
- Many small calculi in the gallbladder with a cystic duct large enough for the stones to pass into the common duct
- A thickened or dilatated common duct
- A small and contracted gallbladder without stones since the stones may have already passed into the common duct.

When cancer of the lower biliary system is a possibility, exploration should be done before cholecystectomy in order to allow for a by-pass procedure later, cholecystojejunostomy, for instance.

When the fat has been freed from the common duct, a 2-cm. longitudinal incision is made between 2 silk stay sutures. Bile is removed with a suction tip and a small scoop is passed several times to take out stones.

A small rubber catheter is passed through the sphincter of Oddi and into the duodenum. Resistance to instillation of saline solution should be slight. If a probe cannot be passed through the sphincter, duodenotomy and sphincterotomy are performed. With the sphincter of Oddi thus opened, any stones can be easily removed. A cholangiogram may be made through a T tube before the wound is closed with silk. The T tube made be removed in seven days in uncomplicated cases.

SURGICAL HAZARDS

Dangers in gallbladder surgery arise from poor exposure of the structures or inadequate understanding of the anatomy on the part of the surgeon.

If severe bleeding occurs from the cystic artery, the hepatic artery should be compressed until the bleeding point is accurately located. Blind hemostatic grasping may injure the common duct or hepatic artery.

When the cystic duct is being tied, moderate traction can cause narrowing and distortion of the common duct wall. When recog-

nized early, duct injuries may be repaired by simple suture of the opening and T-tube drainage distally or by excision of the damaged section of the common duct, end-to-end anastomosis of adjacent portions, and decompression.

If the cystic duct stump is left too long or a portion of the gallbladder is left, the postcholecystectomy syndrome may ensue. Neuroma formation and sphincter of Oddi spasm are other causes of postcholecystectomy symptoms. Other overlooked disease may also cause postoperative distress.

Infantile Emphysema as a Surgical Emergency

J. L. EHRENHAFT, M.D., AND RODMAN E. TABER, M.D., STATE UNIVERSITY OF IOWA, IOWA CITY, believe that resection of the involved pulmonary tissue is the only acceptable treatment for localized progressive emphysema in infants.

The condition may be caused by localized bronchial abnormalities, congenital cystic disease, or obstruction. Actual mucosal folds, a foreign body, or a mucous plug from pulmonary infectious disease may produce the obstruction. Congenitally faulty development, including an anomalous vascular supply, may result in large parenchymal cystic areas. Overly energetic and prolonged resuscitative measures at birth may produce traumatic emphysema, breakdown of alveolar walls, and fragmentation of pulmonary parenchyma; permanent progressive damage can result.

When generalized emphysema is evident, aortic rings, aberrant subclavian vessels, or other lesions producing tracheal obstruction should be looked for by bronchoscopic and, occasionally, angiocardiographic examination.

Diagnosis is based on incidence of progressive dyspnea and findings of intermittent cyanosis, tracheal shift, unilateral hyperresonance with diminution of breath sounds over the same area, limited costal excursions during respiratory efforts, and an emphysematous type of chest. Roentgenograms show emphysema, mediastinal displacement, atelectasis of the adjacent and contralateral lung, depression of the ipsilateral hemidiaphragm, and lung herniation through the anterior mediastinum.

Emergency resection of the involved lung segment or lobe may be necessary as soon as the diagnosis is made. Since the emphysema progresses rapidly during positive pressure oxygen insufflation, the period between the intratracheal intubation for anesthesia and the opening of the pleural cavity is critical.

Occasionally, when tracheal compression by extrinsic lesions seems likely, surgical exploration is advisable.

Progressive infantile emphysema. Surgery 34:412-425, 1953.

Intestinal Obstruction

WARREN H. COLE, M.D.
University of Illinois, Chicago

*The duration and incidence of strangulation are the most important factors altering the mortality rate from intestinal obstruction.**

INTERMITTENT, cramplike pain is noted with *high intestinal obstruction,* but the pain may not occur or may vary if pylorus or duodenum is obstructed. Nausea and vomiting start soon after obstruction and, if stoppage is complete, no stool or gas is passed after the distal intestine is evacuated. Distention is fairly common, but is less prominent with pyloric obstruction or after prolonged vomiting.

The abdomen has a doughy resistance to palpation, but only slight tenderness. Muscle spasm occurs only with strangulation. Intestinal sounds are sharply increased, and peristaltic waves may be noted on the abdomen.

Abdominal roentgenograms show the obstructed intestine as a distended loop with a herringbone pattern.

Electrolyte deficiencies and dehydration are quite common, and the nonprotein nitrogen is usually elevated.

Signs of *low intestinal obstruction* are entirely different, and the obstruction may exist several days with no symptoms other than anorexia and abdominal discomfort. Vomiting is uncommon, but constipation is universal. The typical intestinal cramps are not as frequent as with high obstruction, but distention is pronounced in all patients because of a patent ileocecal valve. Obstruction from cancer is often preceded by melena and weeks or months of abdominal pain and loss of appetite and weight.

As with high obstruction, palpation reveals doughy abdominal resistance, without much tenderness or spasm. Peristaltic sounds are increased but are not typical rushes.

Dehydration and electrolyte deficiencies are less common, but the patient is toxic, probably because of absorption of products in the wall of the intestine. Roentgen examination shows a distended colon with abnormal haustrations and fluid levels.

Strangulation can usually be recognized when the patient has the following symptoms: increase in pain; rapid pulse rate; muscle spasm and a mass; fever and leukocytosis; and low blood pressure. Immediate operation is necessary.

Adynamic obstruction produced by *paralytic ileus* results in similar symptoms, especially after abdominal surgery or perforation of a viscus with peritonitis. Peristaltic sounds are not heard, and roent-

*Intestinal obstruction. J. Iowa M. Soc. 44:51-56, 1954.

genograms reveal gas in both the large and small intestines, with fluid. Ileus must be definitely differentiated, since the treatment is always conservative.

If obstruction is suspected, a nasogastric tube should be passed and suction applied. Intestinal decompression as definitive therapy is permissible only with paralytic ileus and adhesive obstruction. The decompressing tube must always be patent and the patient observed carefully, lest unrecognized strangulation develop.

The timing of operation for intestinal obstruction is important. The correction of dehydration, electrolyte deficiency, and anemia must be accomplished before surgery is begun. If decompression is used definitively and the obstruction is not released within twenty-four hours, surgery should be done immediately.

Patients with intestinal obstruction are quite ill and any procedure must be performed quickly and skillfully, with the least possible trauma and intestinal manipulation. Strangulation increases the mortality rate; resection is just as great a peril. Before decision to resect is made, the return of a pink color and a glistening serosa after the obstruction is released must be definitely noted.

The over-all mortality rate in intestinal obstruction should be between 10 and 15%.

Plastic Dressing for Wounds

DANIEL S. J. CHOY, M.D., DAYTON, OHIO, finds that Aeroplast, a polyvinyl plastic dressing, is valuable for general surgical dressings as well as for emergency application in the mass therapy of burns. The main essentials of a good dressing are met: [1] no retardation of healing, [2] maintenance of sterility in clean wound, [3] ease of application and removal, and [4] transparency.

Aeroplast may be sprayed from an aerosol bomb or spray gun or painted onto the damaged area by a piece of gauze on straight forceps or applicator stick.

The dressing is excellent for lacerations of scalp, face, neck, or hands. Excoriated skin areas clear rapidly beneath the dressing. Aeroplast dressing over open reductions permits skin-tight plaster casts. Sites of emergence of Kirschner wires from the skin may be sealed.

A stinging sensation that lasts thirty to forty-five seconds immediately after application is the chief disadvantage, but is actually infrequent since dressings for all surgical wounds may be applied during the period of anesthesia. No stinging is felt with first- or third-degree burns or granulating wounds.

Clinical trials of a new plastic dressing for burns and surgical wounds. Arch. Surg. 68:33-43, 1954.

Occlusion of Mesenteric Vessels

JOSEPH F. URICCHIO, M.D., DANIEL G. CALENDA, M.D., AND DAVID FREEDMAN, M.D.
Rhode Island Hospital, Providence

*Surgery should be done immediately when mesenteric vascular obstruction is suspected.**

OBSTRUCTION of mesenteric vessels ordinarily involves the superior mesenteric vessels and may be arterial or venous. Disagreement exists as to whether embolism or thrombosis is the more common cause. Myocardial infarction and rheumatic heart disease with auricular fibrillation are important predisposing factors.

Primary arterial thrombosis can but apparently does not often occur. The causes of mesenteric venous occlusion include infection; diseases predisposing to thrombosis, such as polycythemia; trauma to the vessels; and mechanical abnormalities, including portal stasis and tumor pressure. Septic abdominal processes seem to be most important.

The pattern of the disease differs, depending upon the vessel occluded and the degree of collateral circulation, the rapidity of occlusion of a major vessel, the state of the general circulation, the age of the patient, and existence of stasis or any disease predisposing to the development of arteriosclerosis.

The chief symptom is abdominal pain, frequently severe and colicky and usually sudden in onset. Pain may be intermittent and localized at first, but ordinarily becomes generalized and continuous. Vomiting is almost invariable, but hematemesis is not common. Diarrhea, constipation, and melena may also occur.

Abdominal tenderness and rigidity may appear later with the advent of peritonitis. The temperature is often normal until late in the course of the disease. Peripheral vascular collapse occurs before operation or death, but shock is not observed initially unless infarction is massive and sudden.

Signs of intestinal obstruction are not prominent and usually appear later. Peristalsis is often hyperactive in the beginning but gradually subsides. Pronounced leukocytosis is noted, and ileus may be revealed by abdominal roentgenograms.

Without therapy, the disease is almost invariably fatal, but the mortality rate for intestinal resection is also high. However, the mortality figure may be reduced with improved anesthesia and surgical technic; use of antibiotics, anticoagulants, replacement fluids, and blood; and by careful attention to nutrition.

Although anticoagulants are val-

*Mesenteric vascular occlusion. Ann. Surg. 139:206-217, 1954.

uable adjuncts, surgery is imperative. Large resections of the small intestine are tolerated. Adaptation to massive intestinal resection can occur in several ways:

- Weight loss decreases caloric and protein requirements.
- Gastric secretion seems to increase while gastric emptying time is slowed.
- The small bowel may become dilated and hypertrophied.
- The epithelial cells of the villi become larger and the total absorptive area of the remaining small intestine is increased.
- The colon may compensate functionally.
- Hypermotility may be associated with increased absorption.

Postoperatively, severe diarrhea develops and nausea, anorexia, and abdominal cramps may also occur. Excision of a large absorptive area may cause negative nitrogen balance, and replacement therapy is difficult.

The small intestine is apparently more concerned with absorption than digestion since the degrees of utilization of natural and predigested foods do not differ greatly. Fat absorption seems to be greatly impaired, while protein absorption is only moderately decreased and utilization of carbohydrate remains undisturbed.

Hypocalcemic tetany is sometimes observed after large amounts of calcium soaps are excreted in stools. Vitamin K absorption may decrease and the vitamin A level in the plasma is low. A slight hypochromic anemia is noted during protracted diarrhea.

Serial electrolyte determinations, especially of serum potassium, should be made.

Acute Appendicitis with Pneumoperitoneum

THEODORE S. RAIFORD, M.D., AND J. A. M. THOMPSON, M.D., WESTERN NORTH CAROLINA SANITARIUM, BLACK MOUNTAIN, AND VETERANS ADMINISTRATION HOSPITAL, OTEEN, N. C., find a high incidence of acute appendicitis among patients receiving pneumoperitoneum for tuberculosis.

Intraperitoneal air may alter typical symptoms. Rebound tenderness, rigidity, and muscle spasm do not occur. However, abdominal pain and tenderness from direct pressure are constant findings.

Aspiration of the intraperitoneal air is recommended to permit accurate palpation of abdominal viscera and to allow readjustment of pulmonary function before anesthesia and surgery.

The most common operative finding is lack of peritoneal and omental response to inflammatory disease. Since such a situation is conducive to rapidly spreading malignant peritonitis, operation should not be delayed in equivocal cases.

Acute appendicitis in the presence of pneumoperitoneum. Ann. Surg. 139:117-122, 1954.

Nutrition after Gastric Surgery

ROBERT M. ZOLLINGER, M.D., AND EDWIN H. ELLISON, M.D.
Ohio State University, Columbus

*The patient's preoperative weight in relationship to ideal weight is an essential factor in planning the surgical management of duodenal ulcer and is especially important for patients with weights below the lowest ideal standard.**

MANY gastric operations result in distressing postoperative complications unrelated to the original disease and probably referable to the surgical procedure. Diminished appetite, limited food capacity, frequent discomfort after meals, high incidence of food idiosyncrasy, and occasional diarrhea may result in considerable weight loss or inability to gain weight.

A study of postoperative weight trends in 203 peptic ulcer patients one to six years after operation appears to show a definite relationship to preoperative nutritional status. A direct relationship between type of surgery and nutritional status is also observed by grouping the patients.

The *first group* was composed of 74 patients with preoperative weight equal to or above the ideal weight. Slightly more than two-thirds of these patients maintained satisfactory postoperative weight regardless of whether a radical or a conservative surgical procedure was done.

Postoperative weight gains in the remainder of the patients were poor generally.

The *second group* was made up of 94 patients below the ideal weight at the time of surgery who previously weighed as much or more than ideal weight. In this group, the number of patients regaining an ideal weight was reduced to slightly more than a third.

Beneficial effects of conservative procedures were apparent. Only 11.1% of the patients in group 2 having 75% Hofmeister-Polya resections realized ideal weights postoperatively, whereas 46% attained ideal weights after 60% Billroth I resections with vagotomies.

In the *third group* of 35 patients who had never attained ideal weights, not a single person reached the lowest ideal standard weight postoperatively. However, many of these patients did gain some weight, the gain being directly related to extent of surgery. The best weight gains occurred in patients having vagotomies and gastroenterostomies or in those with vagotomies and 60% gastric resections and gastroduodenostomies.

Throughout the entire series a radical gastrectomy of the Billroth II type combined with vagotomy had the most detrimental effect on postoperative weight gains.

*Nutrition after gastric operations. J.A.M.A. 154:811-814, 1954.

Therapy for Thoracic Injuries

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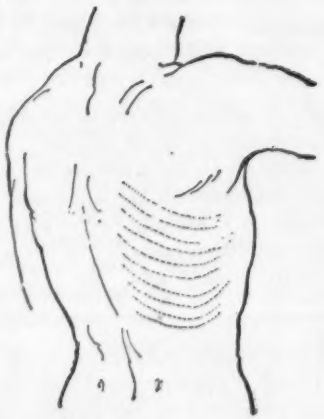
Mayo Clinic, Rochester, Minn.



*Respiratory abnormalities frequently complicate treatment of chest trauma.**

MANAGEMENT of shock, hemorrhage, and infection is fundamental for injuries in any region of the body. With trauma to the thorax, however, proper understanding of respiratory physiology is also essential.

Pneumothorax caused by a break in either layer of the pleura may be open or closed. With open pneumothorax, communication with the atmosphere is through the chest wall. The loss of negative intrapleural pressure allows the lung to contract, and the return of venous blood to the heart is obstructed.

If the opening of the chest wall is smaller than the opening of the glottis, intrabronchial air continues to aerate the lung and respiratory impairment will be slight. Large defects in the chest wall, however, cause swing of the mediastinum from side to side with consequent severe respiratory embarrassment and interference with the venous return to the heart.

Immediate correction of cardiorespiratory imbalance is essential. With small openings, only an airtight dressing is required initially. With large openings, surgery and closed drainage may be necessary to reexpand the lung and to stabilize mediastinal structures.

With closed pneumothorax, air enters the pleural cavity by forced expiration against a partially or totally closed glottis. The lung on the affected side may be completely contracted and compressed. The mediastinum shifts to the opposite side and the other lung may be partially compressed. The diaphragm is displaced downward and the stomach may be dilated.

Simple closed drainage may be sufficient for treatment of closed pneumothorax. An intercostal catheter is inserted into the pleural space. The end of the tube is inserted not less than 5 cm. under water in a bottle placed on the floor beside the patient's bed. Egress of air is thus permitted but air from the outside cannot return. If this

*Management of traumatic lesions of the thorax. J. Iowa M. Soc. 44:108-111, 1954.

water-seal drainage is not effective, a suction device may be applied to the catheter or a tracheotomy performed.

Multiple rib fractures occurring with a crushed chest are often associated with sternocartilaginous and costocartilaginous separations. The chest wall is drawn in with inspiration and protrudes with expiration; air exchange is severely impaired.

The rigidity of the wall of the chest must be restored. With unilateral injuries, wide adhesive straps are applied to the involved side, working from the bottom up. The patient lies on the affected side and is immobilized with sandbags.

With bilateral involvement or when the sternum is injured, the chest wall is suspended by towel-clip traction attached to the costal cartilages or screws in the sternum. Traction of 2 to 4 lb. is applied over the pulley of an upright Balkan frame. The traction may be incorporated in a plaster cast if transportation is necessary.

For all chest injuries, oxygen may be administered by nasal catheter and the airway kept open by frequent tracheal suction. Regional nerve blocks are used to relieve pain and promote effective coughing. Morphine should be used cautiously to avoid depression of respiratory function. Local or endotracheal anesthesia is preferred for surgical procedures.

Anesthetic for Peroral Endoscopy

WILLIAM P. KLEITSCH, M.D., CREIGHTON UNIVERSITY, OMAHA, finds that for bronchoscopic or esophagoscopic examination mixtures of an antihistamine and a local anesthetic may be safer than the latter used alone. The antihistamine tripelennamine (Pyribenzamine) in 2% solution not only induces local anesthesia but also smooth muscle relaxation, inhibition of secretions, and analgesia, which are desirable to abolish gag and cough reflexes during endoscopic procedures.

Because the induction period of tripelennamine is rather long, the drug is used with 0.5% tetracaine (Pontocaine). Approximately 5 cc. of the mixture is applied by cotton swab to the pyriform sinuses and 5 cc. is instilled into the trachea. No premedication is needed.

The resulting anesthesia is superior to that produced by tetracaine or cocaine alone. The mixture is well tolerated, induction is rapid, and the anesthesia lasts long enough for most examinations.

The number of patients for whom the mixture has been used is too small to determine toxicity, but, since tripelennamine is nontoxic in an amount of 200 mg. and the 50-mg. dose of tetracaine is well below recommended dosages, the mixture should be safer than solutions now in use.

A safer anesthetic for peroral endoscopy. Arch. Otolaryng. 59:195-197, 1954.

Cholecystographic Examinations

ROBERT SHAPIRO, M.D.
Hospital of St. Raphael and Yale University, New Haven, Conn.

*Nonvisualization of the gallbladder on cholecystograms of healthy persons may be caused by variations in normal physiology.**

Poor or nonvisualization by cholecystographic examination may be due to any of several factors, many being extracholecystic:

- Failure of the patient to ingest or retain the contrast substance
- Delayed gastric emptying due to pyloroduodenal obstruction or psychogenic factors resulting in prolonged pylorospasm
- Failure of absorption of the medium due to diarrhea, pancreatic disease, or primary disease of the small intestine
- Impairment of hepatic function
- Too rapid emptying of the gallbladder, as occurs with hyperchlorhydria
- Physiologic stasis
- Severe disease of the mucosa of the gallbladder preventing an adequate concentration of the contrast medium
- Lactation, tetraiodophenolphthalein being excreted in the milk of the lactating mother.
- Drug effect
- Previous cholecystectomy
- Cystic duct stone

In oral cholecystographic studies, the contrast medium passes through the pylorus into the small bowel, to be absorbed by the portal circulation and carried to the liver. With adequate hepatic function, bile is secreted by the liver cells and flows down the hepatic ducts. In the fasting state, the bile is unable to enter the duodenum because of the normal tone of the choledochal sphincter mechanism. When the intracholedochal pressure reaches a height of 50 to 70 cubic centimeters of water, the bile is forced up into the cystic duct and then concentrated and stored in the gallbladder.

After ingestion of fat, the hormone cholecystokinin is liberated from the intestinal mucosa and the gallbladder contracts. Cholecystokinin acts directly on the muscularis of the gallbladder. Simultaneous relaxation of the choledochal sphincter causes the concentrated bile to flow into the duodenum.

Hydrochloric acid has a similar though less pronounced effect on gallbladder contraction. Patients with hyperchlorhydria, as in duodenal ulcer, may have early emptying of the gallbladder; thus, if films are made at the usual time of twelve to sixteen hours after ingestion of contrast medium, an erroneous diag-

*Cholecystography. Radiology 62:245-247, 1954.

nosis of nonfunctioning gallbladder may be made.

Drugs may alter response of the gallbladder. Morphine sulfate and derivatives produce spasm of the choledochal sphincter, while amyl nitrite, atropine, and other nitrites evoke relaxation of the sphincter mechanism. Magnesium sulfate, epinephrine, Pituitrin, acetylcholine, eserine, and histamine may excite gallbladder contraction with simultaneous sphincteric relaxation, but the effect is not constant. Sodium hydroxide and sodium bicarbonate produce synchronous relaxation of the gallbladder with closure of the choledochal sphincter.

Gallbladder disease should not be diagnosed merely on the basis of a delayed response to a fatty meal. Response to a fatty meal differs among healthy persons and may be affected by the contrast media, some of which depress gallbladder contractility.

The gallbladders of healthy persons eating prolonged fat-free diets do not empty satisfactorily and become filled with thick, concentrated bile. Fresh bile with contrast medium cannot enter, resulting in poor or nonvisualization when cholecystograms are made. Reexamination after a fatty meal will demonstrate normal concentration of the medium.

Pregnancy may interfere with gallbladder emptying, the rate being retarded during the last 2 trimesters. The delay may be due to hormonal changes. A large proportion of apparently healthy women examined at term show elevated cholesterol and low bile salt levels in the gallbladder.

¶ DETERMINATION OF OCULAR TENSION should be included in all complete physical examinations and can be accurately made by interns without special interest in ophthalmology. Although blood tests to detect syphilis are often routinely applied upon hospital admission, Robert W. Zeller, M.D., and Leonard Christensen, M.D., of the University of Oregon, Portland, emphasize that the incidence of unknown cases of syphilis is far exceeded by that of unrecognized glaucoma. The eye lesion is found in 2% of persons more than 40 years of age and is the cause of 15% of all total blindness. Interns on the Eye Service of the Multnomah County Hospital were advised of the importance of early recognition and treatment of glaucoma, given about ten minutes of instruction in the use of the Schiøtz tonometer, and urged to make as many measurements as possible on newly hospitalized patients. Although, with a little practice, the interns could obtain accurate measurements, few were sufficiently interested to make the tests. This apathy probably reflects the general disinterest among medical school faculties other than ophthalmologists and shows a need for arousing the profession as a whole to the importance of early detection.

J.A.M.A. 154:1343-1345, 1954.

Toxoplasmosis and Chorioretinitis

ALAN C. WOODS, M.D., LEON JACOBS, PH.D.,
R. M. WOOD, PH.D., AND M. K. COOK, M.S.
Johns Hopkins University, Baltimore, and
National Microbiological Institute, Bethesda, Md.

Contrary to general belief, Toxoplasma *can infect the adult eye and apparently causes about one-fourth of granulomatous disease of the uvea.**

INFANTILE chorioretinitis is a well-known effect of congenital toxoplasmosis, but the possibility of acquired adult infection has been subject to controversy. Although fetal disease must be transmitted through the placenta, infected mothers are seldom obviously ill. Even in acute adult toxoplasmosis with pneumonitis, hepatitis, or encephalitis, ocular involvement has rarely been reported.

A study was made of stored frozen sera representing previously diagnosed uveitis. Of the 311 cases included, 201 had been classified as granulomatous and 110 as nongranulomatous. In 98 controls, no uveitis was observed.

The original granulomatous diagnoses were: congenital toxoplasmosis in 10 cases, tuberculosis in 45, syphilis in 15, chronic brucellosis in 14, sarcoidosis in 13, miscellaneous conditions in 26, and undetermined etiology in 78.

Results of the Sabin and Feldman dye test were positive in 25% of the nongranulomatous and control sera but in 45% of the granulomatous group, where reactions were also more pronounced. Among the 78 cases of previously undetermined etiology, 44 positive reactions were noted; in 42 of these, ocular toxoplasmosis seemed likely on review of case records.

Toxoplasma was apparently responsible for granulomatous uveitis in 28% of cases. The infection was congenital in 17, or 8%, and began in adult life in 41, or 20%, of the 201 subjects.

One may therefore conclude that toxoplasmosis is common in adults, even if overt systemic illness is rare, and that the eye is more susceptible than other organs. The parasite may have a special affinity for ocular tissue, or perhaps minute lesions that would pass unnoticed elsewhere cause injury out of all proportion to size.

Diagnosis of ocular toxoplasmosis is justified if the following 3 criteria are fulfilled:

1] Eyes have either active granulomatous uveal lesions, glial scars of old lesions, or possibly periphlebitic retinas.

2] Either no other current or past granulomatous disease is evident or a differential diagnosis is fairly clear.

3] The dye test reaction is positive,

*A study of the role of toxoplasmosis in adult chorioretinitis. Am. J. Ophth. 37:163-177, 1954.

though outcome of the complement-fixation and skin tests may be positive or negative. Dye is reliable with old serum because the modifying antibody is thermostabile and deep-freeze storage requires no preservative.

The Sabin-Feldman technic is based on the capability of immune serum to inhibit methylene-blue staining of the cytoplasm in living protozoa. Reactions become positive early in infection, increase during the active phase of the disease, then gradually subside after a few years.

Criteria for a positive response to dye are serum titers of 1:8 or more below the age of 10 years, at least 1:32 from 10 to 19, and 1:64 from 20 years on. Many apparently healthy persons react with low titers.

Repeated staining tests showing increased reactions are particularly significant, but the ophthalmologist, for practical purposes, usually relies on a single trial. Few laboratories perform the procedure, and most of the patients referred come from a distance and stay only a short time.

The method is apparently specific for *Toxoplasma* and is not positive with other protozoan or yeast infections. A single positive dye reaction, however, may be misleading in 20 to 25% of instances.

The complement-fixation test becomes positive later in active disease and reverts to negative sooner than the dye test but also may last for years.

The toxoplasmin skin test, while showing little more than possible former infection, is increasingly apt to be positive with age.

Whether ocular infection is recent or old may be estimated by appearance of the eye. The most frequent lesions are focal choroiditis and generalized granulomatous uveitis. Occasionally, *Toxoplasma* may cause retinal periphlebitis with secondary vitreous hemorrhages, acute nongranulomatous inflammation with old scars, or possibly optic neuritis.

Retrolental Fibroplasia

HARRY H. GORDON, M.D., JOHNS HOPKINS UNIVERSITY, BALTIMORE, AND LULA LUBCHENCO, M.D., AND IVAN HIX, M.D., UNIVERSITY OF COLORADO, DENVER, observe that retrolental fibroplasia in premature infants is directly related to oxygen administration.

In 211 premature infants weighing less than 1.5 kg. at birth, incidence of residual eye lesions was 45% in those inhaling oxygen concentrations of 60% or higher. With oxygen concentrations of 30 to 40%, the rate fell to 8%.

Other possible causes of retrolental fibroplasia include condition of the capillaries at birth, rate of growth, and dietary components, such as electrolyte or tocopherol content.

Observations on the etiology of retrolental fibroplasia. Bull. Johns Hopkins Hosp. 94:34-44, 1954.

Segments and Blood Supply of the Lung

CHARLES E. TOBIN, PH.D., AND MANUEL O. ZARIQUIEY, M.D.
University of Rochester, N. Y.

ACCURATE radiologic diagnosis and localization of pulmonic lesions, and application of current surgical technics to such lesions, require a thorough understanding of the anatomic units of structure in the human lung, including the bronchopulmonary segments of the lobes.

Two approaches were utilized in this study of the morphologic aspects of bronchopulmonary segments: injection and dissection of isolated adult human lungs, and injection of various segments within the thoracic cavities of adult cadavers, by means of a Jackson bronchoscope.

Radiograms were made of the thoracic region of each of the cadavers to correlate the relations of the radiopaque segments with the other thoracic structures, and also for subsequent correlation with the isolated lungs. The cadavers were then embalmed via the femoral artery and later dissected.

By this method, the size, shape, and relation of the bronchopulmonary segments were visualized radiographically, both in the cadaver and in the isolated lung. In the isolated lungs, the vascular patterns, as well, were depicted.

The observations in this experiment corroborate the findings of other investigators—that the bronchopulmonary segments in the human lung can be demonstrated as definite anatomic units. However, it becomes evident, as shown here and by others, that the size, shape, number, and blood supply of these segments are variable. The size of any segment is not always proportionate to the size of the lung. The boundaries between segments are also variable.

Differences in the number of segments observed appear to be due to fusion or separation of the segmental bronchi where they originate in the lobar bronchus.

The pulmonary veins arise as venules within the lobule, draining centrifugally and joining similar veins from other lobules to form the larger intersegmental veins. The larger intersegmental veins may drain more than one segment.

Branches of the bronchial artery supply the major bronchi and their smaller subdivisions. These branches anastomose with those of the pulmonary artery, and this anastomosis may aid in maintaining circulation of the lung in the event of occlusion of either the bronchial or pulmonary arteries.

Bronchopulmonary segments and blood supply of the human lung. Medical Radiography and Photography 26:38-45, 1950. Illustrations by permission of Medical Radiography and Photography.

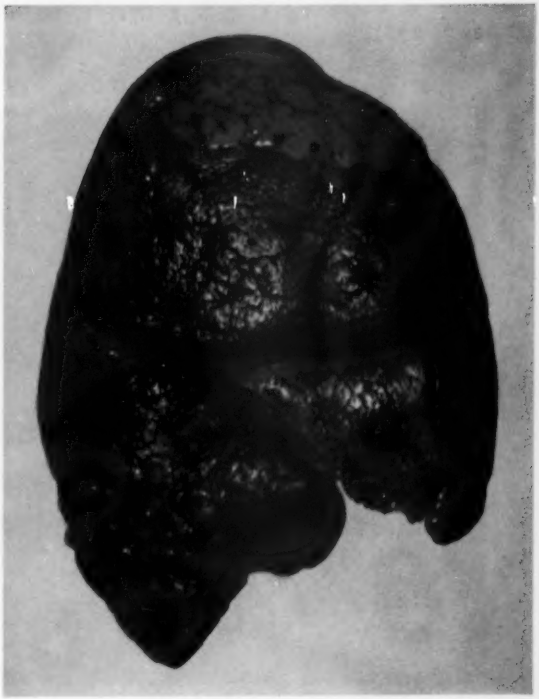
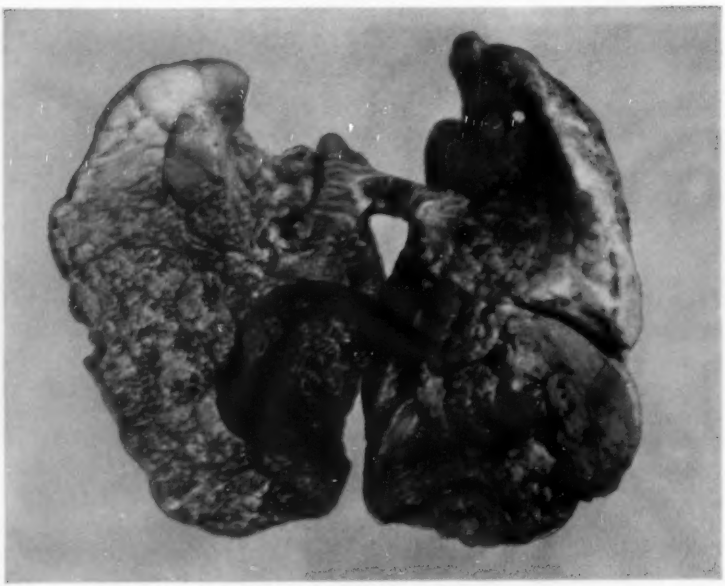


Fig. 1. Lateral aspect of a right lung showing the following segments: upper lobe (apical, red; anterior, blue; posterior, green); middle lobe (lateral, brown; medial, light green); and lower lobe (superior, brown; anterior and lateral basal, red). Note the peninsulas of tissue from the apical segment projecting into the anterior segment of the upper lobe.

CLINICOLOR

SECTION

Fig. 2. Lateral aspect of a left lung that has 3 complete lobes. The superior and inferior segments in the middle lobe of this lung are shown in yellow and tan, respectively. Other segments of the upper and lower lobes are also injected with a suspension of liquid latex colored blue, green, red, or brown.



▲ Fig. 3. Oblique inferior aspect of the embalmed lungs of a 72-year-old woman who died of myocarditis and congestive heart failure. The right medial basal segment (blue) and the left anterior medial basal segment (red) are demonstrated.

◀ Fig. 4. Lateral aspect of the right lung shown in Figure 3. The middle lobe is delineated by the tissue containing the blue latex.

▲

Fig. 5. Inferior (diaphragmatic) aspect of the lungs of a 67-year-old man with a large bronchogenic carcinoma of the left upper lobe. The lateral basal segment of the left lung is shown in red, the posterior basal in blue. In the right lung, the anterior basal segment is shown in orange, and the tip of the middle lobe in blue.

▶

Fig. 6. Lateral aspect of the left lung shown in Figure 5. The lateral basal segment of the lower lobe is shown in red.

Fig. 7. Medial aspect of right lung shown in Figure 1. The posterior basal segment of the lower lobe is indicated by the dark blue color. The segments delineated by other colors are the same as those shown in Figure 1. The superficial parts of several pulmonary segments were dissected in order to study the course and relationships of the bronchi and pulmonary vessels.

CLINICOLOR

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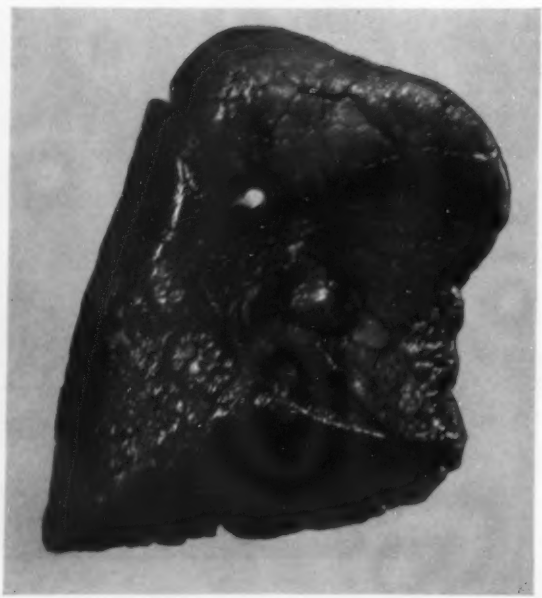


Fig. 8. Medial aspect of a left lung. The pulmonary artery was injected with white liquid latex with which the radiopaque material, Thorotrast, had been mixed. The various segments of this lung were injected with different colors of latex, but only that in the lingular division of the upper lobe (lower red segment) contained radiopaque material.

Protracted Rheumatic Carditis

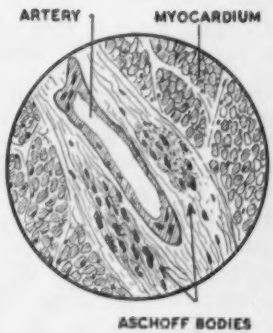
LEO M. TARAN, M.D., GASPER A. GULOTTA, M.D.,
DEVI CHAND, M.D., AND PAULA H. ANGELOS, M.D.
St. Francis Sanatorium, Roslyn, New York

*The acute allergic manifestations of rheumatic carditis may be suppressed by hormone therapy but the protracted course of the disease is not influenced.**

HORMONE therapy for rheumatic carditis produces symptomatic improvement in proportion to the degree of exudative manifestations occuring before treatment. However, the cardiac status remains unchanged and the effect on the protracted disease process is not specific.

Cortisone, ACTH, and Hydrocortone were administered to 83 children with rheumatic carditis in the protracted phase. The dosage and duration of treatment were varied to explore the different types of therapeutic schedules. About 60% of the patients had slight total cardiac damage, and 40% had severe cardiac damage.

Half of the group showed definite symptomatic improvement. The cardiac status of over half the children remained unchanged and an increase of cardiac damage occurred in one-third of the patients. Although 7 patients showed signs of regression, the duration of the rheumatic process was not affected



and slight carditis continued for weeks.

The therapeutic effects of the hormones upon protracted carditis may be classified as follows:

• *Palliative effect*—Many of the exudative phenomena may subside but carditis continues and the extent of valvular damage remains unchanged or progresses.

• *Lifesaving effect*—The course of severe rheumatic pancarditis may be changed. In some patients serous and visceral involvements, rapidly progressive depletion in cardiac reserve, and severe toxic manifestations of acute rheumatic disease with fever, pronounced tachycardia, and cardiac decompensation are noted. Renal involvement, acute hepatitis, and rheumatic phenomena may occur. A precipitous down-

*The effect of cortisone and ACTH on protracted rheumatic carditis in children. Bull. St. Francis Hosp. & San. 11:1-28, 1954.

hill course ensues, despite the use of salicylates and other supportive measures. In one to five days after beginning treatment with hormones, exudative phenomena may disappear. Temperature falls and pericardial or pleural fluid is rapidly resorbed. The disease process may continue unabated, but the hormone therapy helps to save the life of the patient during the acute explosive attack.

• *Elucidative and unmasking effects*—The fundamental nature of the disease may be elucidated. In some children evidence of slight carditis, such as tachycardia or electrocardiographic changes, may occur without other signs of rheumatic fever. After hormone therapy, manifestations of rheumatic fever may slowly evolve. No rebound or severe exudative recurrence is seen. The diagnosis is established but the course of protracted carditis is not influenced by treatment with the hormones.

In contrast, during the acute exudative phase of rheumatic fever the cardiac manifestations may be obscured by the allergic reaction of the patient. When the exudative or allergic signs and symptoms are controlled by hormone treatment, progressive endocarditis, cardiac enlargement, evanescent arrhythmias, and congestive failure are more readily discernible. The proliferative phase of the disease remains unaffected.

• *Provocative effect*—An acute exacerbation of considerable severity may be provoked. With protracted carditis of slight severity, exudative phenomena may develop during or shortly after hormone therapy.

¶ COMPLICATIONS OF CHICKENPOX may be severe or even fatal. Encephalitis beginning early in the disease killed a 1-year-old girl attended by Joseph M. Humphries, M.D., of Children's and Baptist hospitals, Birmingham, Ala. A 19-month-old male recovered from postvaricellar myelitis. Otitis media, oral lesions, pneumonitis, and nephritis may also occur. Dermatoses observed include pyoderma, impetigo, and erysipelas.

J. M. A. Alabama 23:198-201, 1954.

¶ UNDERWEIGHT CHILDREN with anxiety often have increased appetites and gain weight when given a sedative before eating. When elixir of Nembutal is given three times a day before meals, Mario S. Cioffari, M.D., of Detroit found that 92.5% of 40 patients gained from 1 to 6 lb. at an average rate of 2 lb. a month. For children under 7 years of age, ½ tsp. of the elixir containing ⅛ gr. of pentobarbital is administered; 1 tsp. containing ¼ gr. is given to older patients. The method is especially useful when no physical disability is detectable.

J. Michigan M. Soc. 53:183-184, 1954.

Minor Illnesses of Childhood

GEORGE ORMISTON, M.D.
Southampton Children's Hospital, England

*Anorexia, cough, enlarged cervical glands, and abdominal pains are often perplexing therapeutic problems of the preschool age.**

THE anxious mother and her child who "won't eat and hasn't gained weight for months" are often seen by the busy physician. Nothing much may be wrong, because the rate of weight gain usually drops to almost zero between 2 and 3 years of age and then picks up again. If the child is not ill, reassurance of the mother is essential to prevent undue parental solicitude restricting the child's activity.

However, ill health may be the factor causing *anorexia.* Constitutional inferiority is a common cause of lack of appetite in the preschool child. Pale and debilitated, depressed and malnourished, such a child is susceptible to infections and deficiency states. In a child of sounder constitution, anorexia may be a consequence of earlier disorders such as rickets, gastroenteritis, acrodynia, or pertussis. The patient may also be predisposed to allergy, skin or respiratory infections, or intestinal parasitic infestation.

When cachexia is apparent, a tuberculin test, roentgen examination, and estimation of hemoglobin and erythrocyte sedimentation rate are required for accurate evaluation.

A persistent *cough* may result from teething and in such cases is of little import. Irritability and sleeplessness can be alleviated by aspirin and light sedation.

Catarrhal infections and hypertrophy of adenoids or tonsils often produce cough. The nose should be cleansed with swabs or suction applied with a medicine dropper every three to four hours. Instillation of 0.5% ephedrine hydrochloride in normal saline may be beneficial. For a persistent cough, unresponsive to antibiotics, surgery may be required.

Coughing may continue months after pertussis, is usually spasmodic, and after a remission may recur with slight respiratory infection. A course of oral penicillin may be tried; physiotherapy or change of air is effective in some cases. Sedatives often aid the nervous child.

Allergic coughs may be lessened by damp dusting and sweeping and removal of feather pillows. Edema and discharge with allergic rhinitis may be decreased by nasal instillation of antihistamines combined with adrenalin or ephedrine. Breathing and postural exercises often relieve the violent coughing associated with wheezing bronchitis or asthma.

*Minor maladies of the toddler. Practitioner 172:267-275, 1954.

Repeated respiratory infections in children between 3 and 5 years of age cause coughs which should be treated both locally and systemically from the onset. Chloromycetin palmitate may be given as an alternative to penicillin, but the course should not be repeated.

Cervical lymph node enlargement from severe streptococcal or pneumococcal infections of the throat may resolve without specific treatment. Tuberculosis may be suspected when large swellings persist. However, if tuberculosis is not found, treatment with oral penicillin, reinforced if necessary with 300,000 units of procaine penicillin, may reduce swelling.

Abscesses should be drained. Persistently enlarged glands may result from infection in the throat, scalp, or teeth. Tonsillectomy should be considered, especially when throat infections are followed by nephritis or pyelonephritis.

Transient *abdominal pains* usually have simple causes. Constipation is the most common factor. Large, hard stools may produce small anal fissures. Emulsion of liquid paraffin and phenolphthalein will relieve both constipation and fissure.

Abdominal pains around the umbilicus or right iliac fossa, whether vague or sufficiently severe to suggest appendicitis, may be associated with slight recurring respiratory infections. Tuberculosis of the abdominal lymph nodes is rare but occasionally is responsible for pain when the tuberculin test is positive.

Children with cyclic vomiting may have abdominal pain, headache, fever, ketonuria, and constipation at intervals of weeks or months. The constipation or allergy must be controlled; sedatives should be given to high-strung children.

When abdominal pains are functional in origin, an effort should be made to reduce home stresses. Often a change away from home or psychiatric therapy may help. Phenobarbital or sodium bromide may be employed for very emotional patients.

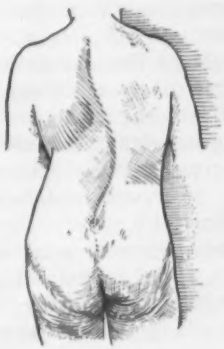
¶ DEGENERATIVE CHANGES in elderly patients who are not afflicted with serious psychiatric disturbances may be treated with a combined analeptic and vasodilator. Sol Levy, M.D., of the University of Washington, Seattle, finds that abnormal personality and behavior are more amenable to this treatment than are defects of intellect and memory. An effective preparation consists of compound pepsin elixir containing 0.2 gm. of pentylenetrazol (Metrazol) and 100 mg. of nicotinic acid per dram. The dose is 1 dram three times daily. Among 30 males aged 61 to 88 years, 70% became less irritable, 52% more sociable, and 48% were able to attend to personal needs. Lactic acid values of the blood and, in some instances, electroencephalographic tracings returned to normal after such treatment.

J.A.M.A. 153:1260-1265, 1953.

Idiopathic Scoliosis

J. I. P. JAMES
Royal National Orthopaedic Hospital, London

*Curve pattern and age of onset determine the amount of disability resulting from idiopathic scoliosis.**



THE pattern of idiopathic scoliosis usually consists of three curves in the vertebral column. With lumbar, thoracic, thoracolumbar, or cervicothoracic scoliosis, the primary curve, which retains rotation on forward flexion, is in the middle and the compensatory curves are above and below. When four curves occur, a combined lumbar and thoracic scoliosis is formed and the two middle curves are considered primary.

Curvature less than 70° is classed as slight, from 70 to 100° as severe, and over 100° as very severe.

The curvature is progressive until growth of the spine is completed, so the earlier the scoliosis begins, the more severe the deformity becomes. Growth of the spine can be considered complete when the iliac apophyses have reached the posterior superior spine.

Surgical correction is difficult if the deformity is of long standing; therefore the conditions leading to severe deformity must be recognized early to make preventive surgery possible.

Lumbar scoliosis begins after 10 years of age and continues during adolescence. The deformity is usually slight. However, because the ribs are not involved in rotation and the shoulders remain level, even a severe lumbar curve may not affect appearance greatly.

Correction of the deformity is never necessary, but osteoarthritis often occurs in later life. Fusion is then sometimes needed to control the resulting low back pain.

Thoracolumbar scoliosis, an uncommon condition, usually appears in adolescence. Some ribs are involved, the shoulder sometimes drops, and the hip occasionally becomes extremely prominent, so a slight curve may cause extreme distortion. Severe curvature is more common than with lumbar scoliosis, but only occasionally requires correction. Back pain is frequent, but fusion is seldom necessary.

*Idiopathic scoliosis. J. Bone & Joint Surg. 36-B:36-49, 1954.

Thoracic scoliosis has the least favorable outlook. The curvature becomes severe in most cases and the deformity is accentuated by the rotation of the ribs, dropping of the shoulder, and prominence of the hip. The pattern and severity of the primary curve depend on age of onset:

- Adolescent thoracic scoliosis begins after 10 years of age, occurs mainly in girls, and curves most often to the right. Because the defect increases to an extraordinary degree, correction and fusion are often necessary.
- Juvenile thoracic scoliosis starts between 5 and 8 years of age, appears almost exclusively in girls, and has a right curvature. The curves are usually severe because of long progression and, when possible, correction and fusion are done.
- Infantile thoracic scoliosis usually commences between 6 and 18 months of age and is most common in boys. The primary curve is almost always to the left and crippling becomes severe unless the curvature is corrected. The end result without surgery is gross disfigurement.

Combined lumbar and thoracic scoliosis usually begins in adolescence but may also occur in infants or juvenile individuals. The lumbar curve prevents the thoracic curve from becoming severe. The shoulders remain level, the hips covered, and the back appears flat. Because of the slight cosmetic defect, correction and fusion are unnecessary.

Silver Stain Cytology

GARDNER M. RILEY, PH.D., EUGENIA DONTAS, M.D., AND BARBARA GILL, UNIVERSITY OF MICHIGAN, ANN ARBOR, find the silver staining method a practical and useful adjunct to conventional diagnostic procedures for detection of uterine carcinoma.

A sample of the vaginal and cervical mucosa is obtained with a cotton-tipped applicator. The smear is prepared by rolling the applicator over the surface of the slide and is fixed at once in 20% neutral formalin with *p*H of 6.8 to 7.1. The slide is rinsed in ammonia water and 2 changes of distilled water and covered with a dilute solution of silver carbonate solution. After reduction in 1% formalin, the slide is rinsed in distilled water and allowed to dry in air before clearing in xylene and mounting in synthetic resin.

In 138 cases of carcinoma, a diagnostic accuracy of 90.7% was attained with cervical cancer, 88.5% with carcinoma in situ, and 42.4% with endometrial carcinoma. Lack of endometrial cells and failure to differentiate the malignant cells from benign atypical cells may have caused an error in detection of endometrial carcinoma.

Silver stain cytology. Obst. & Gynec. 2:575-583, 1953.

Symposium on Irradiation of Gonads

Damage to Posterity

H. J. MULLER, D.SC.
Indiana University, Bloomington

IONIZING rays applied to the ovary or testis are bound to harm descendants, no matter how small the dose. The risk of causing unfavorable mutation by such irradiation has been known for twenty-five years, the only controversial point being the degree of injury produced by a specific amount of radiation.

Genetic influence of radiation was first explored in fruit flies. However, changes have been observed as far down the scale as protozoa, bacteria, and even viruses, in plants of many types, and up to the invertebrates and vertebrates, including mammals.

A common fallacy among the uninformed is that mutations produce grave visible abnormalities. Circus freaks and monsters, though often cited as examples, are rare. For each change obvious in the first or second generation, hundreds are too small or obscure to be seen. Yet genes with unnoticed individual effect have important combined action.

In the modern concept of evolution, all genes now considered normal were once mutant. However, any random change in a complicated system is far more likely to harm than help, and probably fewer than 1 in 1,000 spontaneous mutations are beneficial in the struggle for existence.

Although each generation adds more changes, the sum of mutations does not increase greatly, owing to elimination by natural selection. That is, affected people either die before the child-bearing age or fail to reproduce.

Most mutant genes never become homozygous, since a particular mutant must pass through hundreds of generations before uniting with a similar gene. Meanwhile the line carrying the mutant would have become extinct.

Even with heterozygous transmission, an impairment so minute as to be fatal in only 1 of 100 cases would eliminate all bearers by the hundredth generation.

Likewise, radiation must cause hundreds or thousands of detrimental alterations for every beneficial change induced. But how much is human posterity blighted by a certain amount applied to germ cells? The frequency of forced mutations is exactly proportional to the dose received, apparently no matter how low the amount.

The factor determining the frequency of mutations received by the offspring is the total accumulated dose to the gonads, rather than the intensity and length of exposure or treatment of other body

Damage to posterity caused by irradiation of the gonads. Am. J. Obst. & Gynec. 67:467-483, 1954. Third generation follow-up of women treated by x-ray therapy for menstrual dysfunction and sterility twenty-eight years ago, with detailed histories of the grandchildren born to these women. Ibid. pp. 484-490.

parts. To calculate the mutational harm to a child one must know how much radiation was given to the germ cells of both parents, from the times the father and mother were conceived until the child's conception.

Susceptibility also will vary with the stage of development. Mature spermatozoa or ova have more mutations after irradiation than do primitive spermatogonia or oogonia.

Data on more than 50 newly induced mutations in Oak Ridge studies of mice show 6 or 7 times as much radiosensitivity mutagenically in such animals as in flies. Apparently, the conclusions drawn from *Drosophila* considerably underestimate radiation injury to man.

Among human ova or sperm, 1 mutation occurs spontaneously for 50,000 genes in each generation. Since 600 r of roentgen energy induces 1 mutation for 7,000 genes, 85 r would cause about 1 in 50,000. In other words, 85 r at least doubles the mutation rate.

Assuming that an ovum or sperm contains 10,000 genes, 1 mutation occurs naturally among every 5 gametes and, since each individual is derived from union of 2 gametes, 2 new mutations develop among 5 persons. However, the number of genes in a human gamete probably exceeds 10,000, and some investigators believe that the spontaneous mutation rate is more than 1 per child.

Frequency of genetically caused extinction from entirely natural mutation could hardly be less than 20%, or 1 in every 5 people. The same rules hold for changes due to 85 r of radiation, granting that human and mouse genes react alike.

Suppose that 255 r of roentgen rays is delivered to an ovary to cause ovulation, and 2 apparently normal children are born. At the rate of 1 change with 85 r, 3 mutations would result among 5 gametes. Hence the 2 eggs giving rise to the infants would contain ⅗ x 2, or 1.2, induced mutations, affecting at least 1 child.

The change would be most unlikely to cause overt defect or, in the immediate generation, premature death or failure to reproduce, yet a slight handicap would pass on. This untraceable defect would, in some remote future, cut off the line.

Moreover, very slight effect on many descendants, a number tending to be reciprocal to degree of blight, would add up to the equivalent of a frustrated life, the price paid for an ancestor's escape from frustration.

To those unfamiliar with genetics, injury seems unreal that leaves victims apparently hale and hearty and that cannot be demonstrated with a stethoscope, bacterial culture, or roentgenogram. Yet the rules are well established.

Data thus far reported concerning immediate visible results in human beings are irrelevant to the question at issue. If *Drosophila melanogaster* had been observed with such complete lack of genetic method, the mutagenicity of ionizing rays would never have been discovered.

The frequency of mutations from irradiation is proved by extremely

refined technics and controlled breeding. The harmful hereditary changes are produced by such doses as are used to provoke ovulation, and the frequency is so high that over-all detriment exceeds the benefit.

Any procedure that subjects the gonads to radiation should be reconsidered in the light of modern genetics. Means of reducing exposure should be earnestly sought as well as different therapeutic technics.

Third Generation after Therapy

IRA I. KAPLAN, M.D.
New York City

GENETIC dangers of animal experiments cannot properly be applied to human beings treated for sterility by low roentgen dosage. No one has shown comparable abnormalities in progeny of irradiated women.

Children of mothers who survived atomic bombs in Hiroshima and Nagasaki displayed no adverse genetic influence, although the dose was much greater than is received in therapy.

Dormant mutations, if lethal, become evident only when sufficiently numerous to provide a union in the mating of 2 individuals. Probably not more than 2,000 to 3,000 women in the United States have borne children after irradiation. In a population of 180 million, the chance that the progeny of such women will mate is extremely small.

Of 660 infertile women treated with high- or low-voltage roentgen therapy in twenty-eight years, 270 who later became pregnant were traced. All of 347 children subsequently born were mentally and physically normal.

Of 34 children whose mothers were irradiated twenty or more years ago, 20 have married and produced 14 healthy offspring. Each grandchild of the originally sterile patients has been pronounced in good health by a competent pediatrician.

Practical results certainly demonstrate the propriety of x-ray treatment for female sterility.

¶ THREATENED ABORTION may sometimes be foretold from cellular abnormalities found in vaginal smears. Basophilic cells with large vesiculated nuclei are normal in early pregnancy, but Jack R. Pierce, M.D., and Hershel B. Cope, M.D., of the Virginia Municipal Hospital, Virginia, Minn., point out that large acidophilic, polygonal, clear structures with small, dark pyknotic nuclei result from estrogenic stimulation and deficient progesterone activity. When 30% or more of the cells are estrogenic and bleeding has occurred in the first four months, an abnormal decidua or placenta is likely. In this condition incidence of abortion is high, but treatment may help some patients. Treatment is usually unnecessary for bleeding associated with normal pregnancy smears.

Am. J. Obst. & Gynec. 67:47-51, 1954.

Ion Exchange for Preeclamptic Toxemia

RUSSELL R. DE ALVAREZ, M.D., ELIZABETH KNAPP SMITH, PH.D., AND HARRIS W. BARBER, M.D.
University of Washington, Seattle

*Sodium-removing resins are valuable adjuncts in the treatment of preeclampsia.**

THE carboxylic resins are suitable for removing sodium from the body because abrupt changes in acid-base balance are not produced. The resins are readily buffered by body fluids.

The carbo-resins may be administered in milk or water. A dosage of 16 gm. three times a day after meals for four days decreases edema in patients with toxemia of pregnancy. The course may be repeated after a four-day rest period. Other measures, including a diet low in sodium, averaging 750 mg. of sodium daily, should be used concomitantly.

The greatest amount of urine sodium is excreted during the first two days of therapy. Excretion decreases during the next two days; the first reaction of the kidney is to the acidifying effect of the resin and the diminishing available sodium in the body. With repeated courses of therapy, excretion is reduced further, probably because of increased gastrointestinal excretion.

Serum sodium remains within normal limits, emphasizing the effectiveness of the kidney in maintaining concentrations of sodium. Urine output and water balance are not significantly affected.

Amounts larger than 48 gm. daily may produce hyponatremia even when renal compensatory defenses are adequate. If body sodium is depleted, the tubules actively reabsorb sodium and reduction in urinary output results. Also, the pulse pressure falls, and hyperkalemia with distinct electrocardiographic changes of elevation of the T waves and prolongation of PR and QRS intervals occurs.

Urinary excretion of electrolytes due to ion exchange resin is not a satisfactory over-all index of sodium metabolism. Urinary sodium represents only about 30% of the total excretion; the rest is excreted mainly in the stool. In contrast, normal sodium excretion is approximately 95% in the urine and 5% in the stool.

Under exact metabolic control, water excretion during ion exchange treatment is approximately 90% by the kidney and 10% by the gastrointestinal tract. Hence, whenever sodium diuresis occurs, whether gastrointestinal or renal, an accompanying but not proportionate water diuresis also occurs.

*Patterns of sodium and water metabolism during ion exchange treatment of preeclamptic toxemia. West. J. Surg. 62:71-83, 1954.

Intravenous Pitocin in Obstetrics

ERNEST W. PAGE, M.D.
University of California, San Francisco

*Attendance of the physician is the most important requisite in the administration of intravenous Pitocin infusions for obstetrics.**

ONE of the most potent drugs known, Pitocin, exaggerates the existing pattern of uterine motility and, of all available oxytocics, is the only one that should be administered in late pregnancy before delivery. The proper dose cannot be measured in units or volumes but only in terms of individual uterine response.

Intramuscular Pitocin in 10-fold dilution is useful for periods of stimulation of less than one hour or for determining the uterine threshold of sensitivity. Graded doses are given every half hour until uterine contractions are adequate. If labor is thus induced, intravenous administration is not necessary. If no effect is noted with the highest dose, oxytocic therapy is discontinued.

Once the threshold is established, the intravenous route is preferred because of ease of control. Within two to three minutes after shutting off an intravenous infusion, oxytocic activity ceases.

The most commonly employed dilution of Pitocin for intravenous use is 1 cc. (10 units) of commercial Pitocin to 1 liter of 5% dextrose in water. Most women in labor, however, do not require such high concentration.

The best method of administration is as follows: A small bottle containing a solution of dextrose and a large one with the Pitocin solution are connected to a Y tube. A short, 22-gauge needle is placed into a vein in the forearm and covered with adhesive tape to allow the arm freedom of motion.

The infusion is begun with the small bottle. After switching to the large flask containing the Pitocin and regulating the flow with a tunnel clamp, an analgesic mixture may be added to the small bottle. Ordinarily, 200 mg. of Demerol, with or without scopolamine, is

*The usefulness of intravenous Pitocin infusions in obstetrics. West. J. Surg. 62:125-135, 1954.

added, and a quarter of this amount is administered every few hours as needed.

The infusion is almost always continued through the second and third stages of labor and until the patient is ready to leave the delivery room.

As soon as the infant's head appears, the Pitocin is allowed to flow rapidly. After delivery of the placenta, ergonovine or Methergine is injected into the intravenous tubing.

The physician should be in attendance during the entire procedure. When a brief absence from the labor room is unavoidable and a nurse trained in obstetrics is not available, the patient should be instructed to clamp the tubing if a uterine contraction lasts longer than sixty seconds.

In a review of 3,500 cases in which intravenous Pitocin was used, no maternal deaths or uterine ruptures occurred, although 5 fetal deaths were attributed to oxytocic therapy.

Intravenous Pitocin is very effective when used to [1] prolong labor due to atonic uterine inertia, [2] induce labor, when combined with artificial rupture of membranes, [3] induce labor one or more days after spontaneous rupture of membranes, [4] prevent postpartum hemorrhage in selected cases, and [5] actively treat postpartum hemorrhage caused by uterine atony.

In addition, the oxytocic drug is frequently employed, though not as successfully, for [1] induction of labor without rupture of the membranes, [2] secondary inertia during the second stage of labor, and [3] missed abortion in hospitalized patients.

Intravenous Pitocin should not be given to patients with [1] cephalopelvic disproportion, [2] fetal malpresentations causing dystocia, [3] factors, such as previous cesarean or grand multiparity, that predispose to uterine rupture, [4] factors predisposing to thromboplastin or amniotic fluid embolism, as a dead fetus or abruptio placentae, or [5] hypertonic patterns of labor.

¶ TRICHOMONAL VAGINITIS is often eliminated within one week by douching with Tri-va. Douches are taken twice daily for six days and then once daily for six days if no organisms are found in a wet mount. Henry C. Gernand, M.D., and Robert Gallagher, M.D., of the Hollywood Presbyterian Hospital, Los Angeles, believe that recurrence of the disease is caused by reinfection rather than by resistant forms of the flagellates. Of 45 patients infected with *Trichomonas vaginalis,* 43 remained asymptomatic during three months of observation; 12 of 15 women with mycotic or monilial vulvovaginitis became symptomless in one week. Tri-va, which is dispensed in single-dose packets of 3.3 gm. to be dissolved in 1 qt. of warm water, has the percentage composition: alkyl aryl sulfonate, 35; sodium sulfate, 53; oxyquinoline sulfate, 2; and lactose, 10.

Obst. & Gynec. 2:522-526, 1953.

Nonopaque Urinary Tract Calculi

CHARLES C. HIGGINS, M.D.
Cleveland Clinic, Cleveland

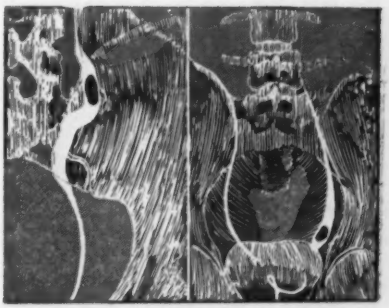
*Extraneous factors and poor radiographic technic are usually responsible for failure to visualize urinary tract calculi.**

TRUE nonopaque renal calculi are uncommon. The atomic weight of the constituents of a stone may produce relatively low opacity, but other factors also influence visibility on a radiogram. These include physical characteristics of the patient, position of the kidney, size of the calculus, bowel contents, immobilization of the parts during exposure, and the technic of making the radiogram.

Stones of relative nonopacity ordinarily are composed of uric acid, urates, xanthine, or other organic materials. Small cystine renal calculi are nonopaque but large stones usually contain enough calcium to cast shadows that can be seen on roentgenograms.

RENAL CALCULI

The soft tissue technic is advisable for visualization of the kidneys and renal calculi, as differences in density between stones of low opacity and the kidneys and surrounding tissues will be delineated. The lowest voltage consistent with adequate penetration of the part to be examined is used. Milliampere second



ratio is increased to give proper exposure; 200 to 300 Ma.S. usually gives best results. In viewing soft tissue radiograms, shadows not discernible by the usual white light often will be clearly defined by red, green, or blue light.

Because a greater thickness of tissue must be penetrated in stout muscular persons, stones may cast only faint shadows on the films. When, in addition, the calculus has a relatively low opacity, visualization may be extremely difficult.

Mottled shadows of uneven density cast by fecal bowel contents may obscure faint shadows of renal calculi; gas in the bowel may do the same. Adequate preparation of the patient is necessary to eliminate such possibilities.

Improper immobilization during exposure often blurs upper and lower edges of a stone while the lateral borders remained defined. In

*Nonopaque urinary tract calculi. J. Urol. 70:857-863, 1953.

such instances the stone may be missed.

URETERAL CALCULI

Of 500 consecutive cases of ureteral calculi, 4% failed to cast a shadow or were not seen when the roentgenograms were reviewed. Most frequently overlooked are calculi located medial to the spine of the ischium and just above a line joining the lowest part of the ischial spines. However, bony pelvic structure may mask the stone shadow.

VESICAL CALCULI

Even when roentgenograms are carefully studied, a large percentage of stones in the bladder will not be visible. When a patient with symptoms of vesical calculus has a normal roentgenogram, cystoscopic examination is advisable.

Many bladder calculi designated as nonopaque are phosphatic and have the same relative opacity as soft body tissues. Also, the stone may be obscured in the roentgenogram because the shadow lies over the sacrum.

When symptoms are suggestive of calculous disease of the urinary tract stereoscopic radiograms should be made, if possible. Excretory urograms also frequently disclose kidney stones which would be obscured by retrograde urographic media. Occasionally a delayed film, made an hour after removal of a ureteral catheter used for retrograde pyelography, will reveal a previously nonopaque calculus. When nonopaque renal calculi seem likely, air pyelograms may be made without untoward effects.

Excretory urograms, retrograde pyeloureterograms, or air pyeloureterograms are used to identify radiopaque calculi in the ureters.

Subsidence of the pain after an attack of renal colic when the initial film is normal should not lead to the deduction that a stone was spontaneously passed.

Operation for Priapism

OSWALD S. LOWSLEY, M.D., ST. CLARE'S HOSPITAL, NEW YORK CITY, AND ABEL GONZALEZ, M.D., CIUDAD TRUJILLO, DOMINICAN REPUBLIC, advocate an operation for the relief of priapism. Through a perineal approach each corpus cavernosum is irrigated with a solution composed of 1,000 cc. normal saline, 100 mg. heparin, and 200,000 units crystalline penicillin. The constant-drip irrigating fluid flows into a 10F catheter and the dissolved material comes out through a 14F catheter.

Local factors, such as trauma, thrombosis, infection, hemorrhage and hematoma, inflammatory swellings and edema, and tumors encroaching on the nerve endings, are the most common causes of priapism. The disorder occurs with some nervous and systemic conditions, including syphilis, leukemia, and sickle-cell anemia.

A new operation for the cure of priapism. New York J. Med. 54:61-64, 1954.

Postoperative Urinary Incontinence

JAMES S. ELLIOT, M.D.
Stanford University, San Francisco

*Excessive removal of smooth muscle and connective tissue about the urethra probably causes urinary incontinence after surgery.**

PRIMARILY unconscious or involuntary, urinary continence depends upon the efficiency of smooth muscle and connective tissue about the urethra.

Most individuals are unaware of the bladder until the organ contains 250 cc. or more of urine. No conscious effort is made to maintain continence during filling or sleep.

Only when an urgent desire to void occurs must the healthy person or most postprostatectomy patients consciously contract the perineal muscles to avoid dribbling. Contraction of the striated muscle is vigorous but capable of only brief activity. Some persons with atrophy of all the striated perineal muscles void by reflex without incontinence.

The urethra is almost completely surrounded by striated muscle only where the canal transverses the triangular ligament. The posterior wall of the prostatic apex and membranous urethra is composed entirely of connective tissue and smooth muscle.

Cystograms and urethrograms, after transurethral resection, reveal that urine is retained near the prostatic apex, well proximal to the triangular ligament. Some incontinence frequently occurs after the prostatic apex is removed and the triangular ligament is intact.

The urethra is more accessible in the female, and surgical correction of incontinence is more feasible. Operative procedures include plication of the bladder neck or bladder neck and urethra, utilization of striated muscle strips to compress the urethra, or use of fascial strips or the vaginal wall to support or elevate the bladder neck or urethra.

No method has proved satisfactory for the surgical correction of incontinence in the male. If the external urethral sphincter is primarily smooth muscle, the logical approach would be to increase the passive or unconscious urethral resistance near the prostatic apex.

No improvement follows plication of the triangular ligament and membranous urethra or external compression of the bulbous urethra by muscle or fascia. Troublesome strictures usually follow wedge excision of a part of the bladder neck with transvesical closure. Compression of the membranous urethra and apex by a retropubic sling of rectus fascia is satisfactory in some cases.

*Postoperative urinary incontinence, a revised concept of the external sphincter. J. Urol. 71:49-57, 1954.

Encephalographic Study of Seizures

HERBERT L. MARTIN, M.D., AND FLETCHER MC DOWELL, M.D.
Bellevue Hospital and New York Hospital–Cornell Medical Center, New York City

*Unless bedside neurologic findings are positive, air encephalograms rarely indicate an intracranial lesion except when seizures are focal.**

ALTHOUGH seizures are initial symptoms of 20 to 35% of patients with intracranial tumors, encephalographic study frequently does not reveal a mass. Among a large group of patients with convulsive disorders, brain tumors were evident by air encephalograms in only 1% of younger patients and 10% of older patients.

With generalized seizures, the air encephalogram rarely demonstrates an intracranial mass if focal brain dysfunction is not evident from the neurologic examination. However, when the seizures are focal, the air encephalographic examination will probably reveal a brain tumor even though the results of the neurologic examination are found to be negative.

Physical and neurologic examinations, skull roentgenograms, spinal fluid studies, and air encephalograms were made of 245 patients whose attacks began after the age of 12 years. All the patients were studied during the past ten years.

Of 190 patients with generalized convulsions, 74 had positive neurologic findings, and, of these, air encephalographic examinations disclosed intracranial masses in 49. However, an intracranial lesion was evident on the air encephalogram of only 1 of the 116 patients with negative neurologic findings.

Somewhat different results were observed in the 55 patients with focal seizures. Of the 37 patients with positive neurologic findings, encephalographic studies disclosed intracranial masses in 30. Brain tumors were also evident on the films of 3 of the 18 patients with negative findings on neurologic examination.

Of 71 proved supratentorial brain tumors, 49 were demonstrated by electroencephalographic studies. Regardless of the type of seizure, a mass lesion is seldom evident on the electroencephalogram if neurologic examination reveals negative findings.

*Evaluation of seizures in the adult. Arch. Neurol. & Psychiat. 71:101-104, 1954.

SPECIAL EXHIBIT

ABDOMINAL INCISIONS

LOUIS T. PALUMBO, M.D.
Chief, Surgical Service, Veterans Administration Center, Des Moines, Iowa

IRVING A. KNIGHT, M.D.
Beverly Hills, Calif.

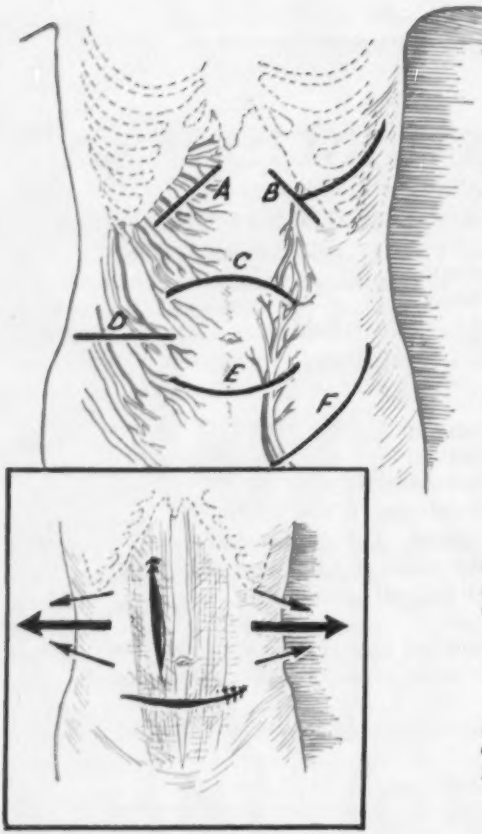
This study was prompted by the adherence of so many to the standard midline and paramedian incisions despite the many unfavorable reports of high incidence of wound dehiscence and herniation.

During a six-year period, 730 consecutive muscle-splitting or transverse abdominal incisions were used in a variety of major surgical conditions.

- *Nonabsorbable suture was used in 98% of cases.*
- *Patient age ranged from 24 to 73 years; 14% were over 60.*
- *Postoperative observations covered three to sixty months.*
- *Early ambulation was used in 70% of cases.*
- *Wound complications, such as infection and hematoma, occurred in 4%.*
- *Wound dehiscence appeared in only 0.1% of cases.*
- *Postoperative incisional hernia occurred in 0.4%.*

A Modern Medicine Exhibit adapted from a presentation made at the American Medical Association Clinical Session, St. Louis

ANATOMIC CONSIDERATIONS



Skin incisions in relationship to bony landmarks and neurovascular supply

A Subcostal
B Thoracoabdominal
C Transverse supraumbilical
D Transverse midabdominal
E Transverse infraumbilical
F Oblique suprainguinal

Strong fibers of anterior and posterior rectus sheaths take a transverse direction.

Normal muscular pull is in a transverse direction away from midline.

In closure of a vertical wound, sutures are placed parallel to strong transverse fibers and, therefore, are less secure than in a transverse wound where sutures are placed perpendicular to transverse fibers.

Normal muscular pull *(see arrows)* tends to keep wound margins apart in vertical incision, while the same force aids in maintaining the transverse margins in approximation.

COMPARISONS

Transverse and Muscle-Splitting Incisions

Anatomically and physiologically sound
- Placed in direction of normal muscle pull and normal lines of strain
- Provide adequate exposure with minimal amount of retraction
- Minimal interference with nerve and blood supply to structures of abdominal wall
- Effective multilayer closure of wound with minimal strain on suture line

Reduced pulmonary complications, because coughing and deep breathing are less painful

Early ambulation safe, resulting in earlier wound healing, minimal complications, shorter hospital stay, and rapid rehabilitation

Occurrence of wound dehiscence and postoperative incisional hernia rare

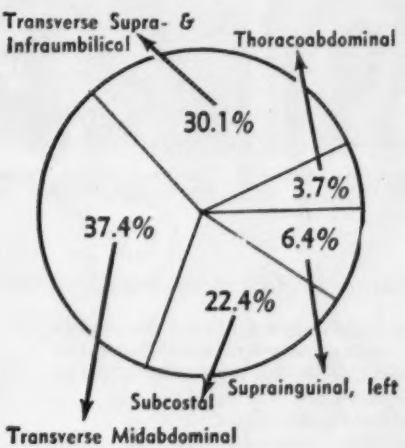
Vertical Abdominal Incisions

Anatomically and physiologically unsound
- Injury to nerve supply to abdominal muscles with resultant atrophy of muscle
- Interference with blood supply to abdominal structures resulting in delayed wound healing
- Wound closure insecure due to strong normal lateral pull of abdominal muscles and to sutures placed parallel to the direction of the strong aponeurotic fibers
- Normal muscular pull on incision 30 times greater than in a transverse incision

Pulmonary and other complications more common because pain and discomfort are greater

Incidence of postoperative hernia 2 to 10% and of wound dehiscence 1 to 3%

Type of Incision



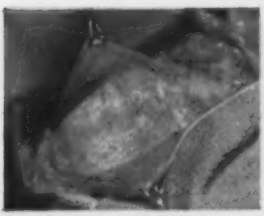
Incisions and Operations

SURGICAL PROCEDURES PERFORMED

Type	No.
Abdominoperineal resection	14
Cholecystectomy	149
Colon and pelvic surgery	65
Esophageal surgery	5
Gastrectomy, partial and total	211
Ileum, resection	6
Pancreatectomy	1
Portacaval anastomosis	3
Resection, colon, anterior	31
Splenectomy	9
Sympathectomy, lumbar	236
Total	730

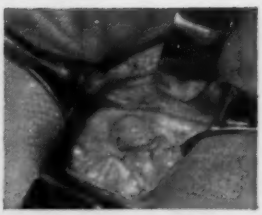
SPECIAL EXHIBIT

TRANSVERSE MIDABDOMINAL INCISION

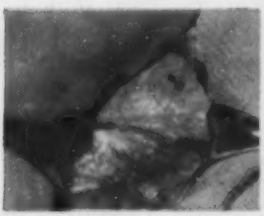


1 External oblique muscle divided in direction of its fibers. The internal oblique muscle intact.

2 Internal oblique muscle divided in direction of its fibers. Transversus abdominis muscle intact.



3 All muscles divided, exposing the peritoneum and retroperitoneal fat



4 Closure of the transversus muscle with interrupted 00 silk

5 Closure of internal oblique muscle with 00 silk

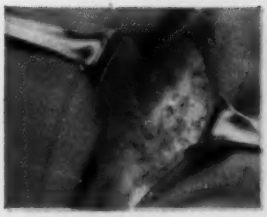
6 Closure of external oblique muscle with 00 silk

Transverse Midabdominal Incision, Right or Left, 273 Cases

Ample exposure for operation on right or left half of colon, lower small bowel, appendix, kidneys, ureter, retroperitoneal tumors or masses, inferior vena cava, aorta, and lumbar sympathetic chain

Average patient age, 49 years
1 (0.37%) incisional hernia developed
Early ambulation in 78% of cases
No wound dehiscence

SUBCOSTAL INCISION



1 Anterior rectus sheath and the external oblique muscle exposed

2 Anterior rectus sheath and rectus abdominis muscle divided. External oblique muscle divided in the direction of its fibers. Posterior rectus sheath exposed.

3 All layers of abdominal wall divided. Note degree of exposure.

4 Posterior rectus sheath sutured with interrupted 00 silk

5 Anterior rectus sheath and external oblique muscle sutured with interrupted 00 silk

6 Superficial fascia and skin closure. The drains placed through separate stab wound not in view.

Subcostal Incision, Right or Left, 163 Cases

Ample exposure for surgery on gallbladder and biliary tree, duodenum, liver, kidneys, adrenals, spleen, hepatic or splenic flexure of colon, and head or tail of pancreas

Average patient age, 48
2 (1.3%) small incisional hernias developed
Early ambulation in 72% of cases
No wound dehiscence

SPECIAL EXHIBIT

OBLIQUE SUPRAINGUINAL INCISION

1 Anterior rectus sheath and the external oblique aponeurosis exposed

2 Anterior rectus sheath, part of external oblique aponeurosis, and rectus abdominis divided

3 The other muscles of the abdominal wall divided, exposing peritoneum

4 Adequate pelvic exposure; lesion in rectosigmoid

5 The peritoneum, posterior rectus sheath, transversus abdominis, internal oblique aponeurosis, and part of anterior rectus sheath sutured with interrupted 00 silk

6 Closure of anterior rectus sheath and external oblique aponeurosis completed

Oblique Suprainguinal Incision, Left, 47 Cases

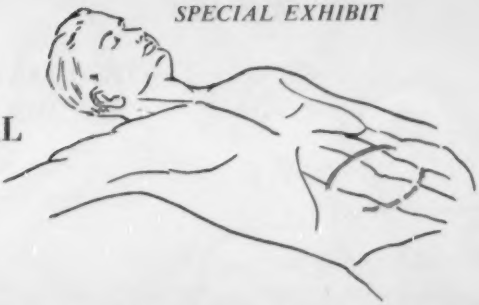
Ample exposure for operations on sigmoid, rectum, pelvic viscera, aorta, iliac vessels, small bowel, left lumbar sympathetic chain, and left ureter

Average patient age, 53 years
No incisional hernia

Early ambulation in 64% of cases
1 (0.21%) wound dehiscence

SPECIAL EXHIBIT

SUPRA- AND INFRAUMBILICAL INCISION



1 Anterior rectus sheath exposed. Note transverse directions of fibers.

2 Anterior rectus sheath divided transversely, exposing rectus abdominis muscles

3 Rectus abdominis muscles divided transversely, exposing posterior rectus sheath. Minimal retraction of muscle.

4 Three layers of abdominal wall divided. Excellent exposure obtained.

5 Closure of posterior rectus sheath completed with interrupted 00 silk sutures

6 Closure of anterior rectus sheath completed with interrupted 00 silk sutures

In infraumbilical incision, anatomic structures divided and sutured are identical to those shown above.

Transverse Infraumbilical Incision, 17 Cases

Ample exposure for operations on entire colon, small bowel, pelvic viscera, retroperitoneal tumors and masses, aorta, inferior vena cava, and sympathetics

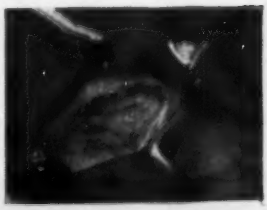
Average patient age, 32 years
No incisional hernia
Early ambulation in 58% of cases
No wound dehiscence

Transverse Supraumbilical Incision, 203 Cases

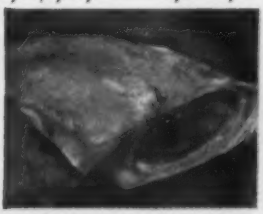
Adequate exposure for operations on stomach, duodenum, pancreas, transverse colon, upper small bowel, kidneys, adrenals, liver, vagus nerves, and lower esophagus

Average patient age, 48 years
No incisional hernia
Early ambulation in 58% of cases
No wound dehiscence

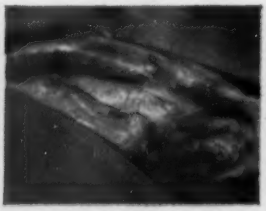
THORACOABDOMINAL INCISION



1 Exploratory subcostal incision through anterior and posterior rectus sheaths and the rectus abdominis muscle



2 Exposure of the intercostal muscles of lower anterolateral aspect of thoracic cage



3 Division of chest wall by intercostal incision

4 Division of costal arch in 7th, 8th, or 9th interspace

5 Retraction of wound margins, providing adequate exposure of lower thoracic and upper abdominal cavities

6 Closure of diaphragm with interrupted 00 silk

7 Muscles of chest wall sutured with interrupted 00 silk

8 Anterior and posterior rectus sheaths sutured with interrupted 00 silk

Thoracoabdominal Incision, Right or Left, 27 Cases

Ample exposure for operations on stomach, esophagus, spleen, kidneys, adrenals, liver, gallbladder, portal vein, and inferior vena cava

Average patient age, 48 years

Early ambulation in 85%

No incisional hernia

No wound dehiscence

Cancer of the Tongue

CHARLES L. MARTIN, M.D.
University of Texas, Dallas

*Low-intensity radium needles are preferred for the accessible intra-oral carcinomas.**

More than half of tongue cancers metastasize to cervical lymph nodes. Since combined treatment with low-intensity interstitial radium and roentgen ray is often successful, block dissection may be reserved for irradiation failures.

The same basic technic is employed for primary and metastatic lesions. Needles containing 0.66, 1.33, or 2.4 mg. of radium are implanted in the tumor site for seven days. Between 6,000 and 12,000 gamma r are delivered to the involved area. Supplementary roentgen therapy is used for the primary lesion only if a posterior location makes adequate radium dosage impossible. Radiation is always employed for metastases.

Any enlarged cervical lymph nodes are treated as metastases. Biopsy of cervical nodes may disseminate the tumor. Needle biopsies are performed when diagnosis is doubtful, but manipulation of the nodes is avoided whenever possible.

The hazard of radiation sequelae is greatest from external sources because a larger amount of tissue must be traversed by the rays. The mandible may be damaged by over-enthusiastic prophylactic therapy of submental and submaxillary areas, occasionally necessitating jaw resections.

Proper precautions lessen radiation necrosis of soft tissue or bone. Treatment of primary and metastatic lesions is done in two stages, preferably six weeks apart. Irradiated areas are never allowed to overlap. Secondary surgery is performed for occasional small patches of necrosis or for local recurrences. A secondary block dissection may also be possible for an advanced growth without complete lymph-node regression.

All of 94 patients treated during 1936-48 have been observed at least five years. The over-all five-year cure rate was 32%. Complete healing of the primary lesions was seen in 67 or 71.2% of the patients. Of 56 patients with palpable cervical nodes, 17.8% survived five years.

Of 64 patients not listed as cured, 1 died of severe nephritis before the radiation was finished and 12 with excellent primary healing died from such unrelated disorders as pneumonia, cirrhosis of the liver, and heart disease before five years of observation had been completed.

Death was attributed to distant metastases in only 5 patients.

*Treatment of cancer of the tongue and its cervical metastases with irradiation. South. M. J. 47:1-9, 1954.

Book Chapter

From the book CURRENT THERAPY 1954*

Treatment of Peptic Ulcer

JOSEPH B. KIRSNER, M.D.† JULIAN M. RUFFIN, M.D.‡
University of Chicago *Duke University, Durham, N.C.*

Method of Dr. Kirsner

Peptic ulcer results from the failure of the gastroduodenal mucosa to withstand the digestive action of acid gastric juice. Hypersecretion predominates in duodenal ulcer; decreased tissue resistance seems to be the principal factor in gastric ulcer. Although other mechanisms undoubtedly are involved, the presence of hydrochloric acid is indispensable to the development and chronicity of both lesions. The purpose of present therapy in peptic ulcer consequently is protection of the mucosa from the acid gastric juice. This objective might be accomplished either by increasing tissue resistance or by permanently inhibiting the secretion of the acid.

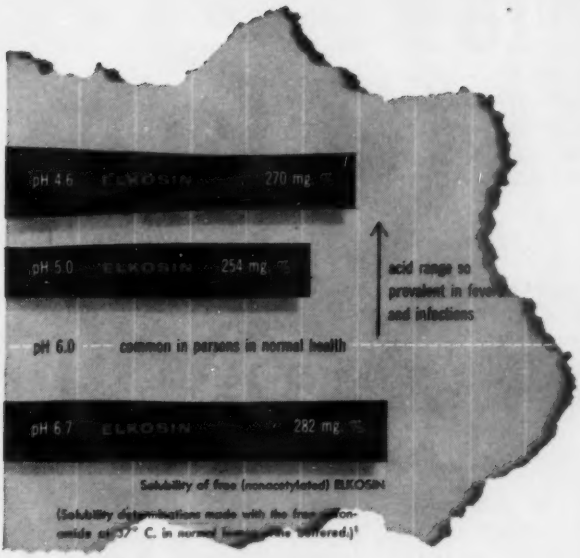
Unfortunately, there is no thoroughly established method for directly improving the tissue defenses. The extracts of animal stomach and intestine, pregnant mares' urine, endocrine preparations, and other materials thus far administered for this purpose are of no demonstrable value. Theoretically, tissue resistance might be strengthened indirectly by maintaining the general health and nutrition of the patient, by abstinence from irritating foods and drugs, and by the avoidance of physical and emotional stress.

The permanent suppression of acid would eliminate the problem of peptic ulcer, regardless of the tissue susceptibility and the other possible etiologic factors. However, no method, pharmacologic, medical, or surgical, except total gastrectomy, consistently produces complete and permanent anacidity. Hence, no procedure per se regularly induces a cure of the disease. Treatment consequently emphasizes the effective neutralization or inhibition of hydrochloric acid and simultaneously the elimination of peptic activity in the gastric content.

The program outlined suggests principles of therapy; the details

*From the book, *Current Therapy 1954*, edited by Howard F. Conn, M.D. 898 pages. Published by W. B. Saunders Company, Philadelphia, 1954. $11

†Professor of Medicine, University of Chicago, and Attending Physician, Albert Merritt Billings Hospital, Chicago.
‡Professor of Medicine, Duke University, and Director of Out-patient Clinic and Chief of Gastroenterology, Duke Hospital, Durham, N.C.



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in the acid pH range
so prevalent in fevers and infections
alkalis not needed

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I. Ziegler, J. B.; Bagdon, R. E., and Shabica, A. C.: To be published.

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must be adapted to the needs of the individual patient. In the absence of curative measures, treatment must be prolonged not only to facilitate complete healing of the active ulcer but also to decrease the tendency to recurrence.

DIET

The dietary management of peptic ulcer is based on the principle of frequent feedings of soft, bland foods providing an adequate intake of proteins, carbohydrates, calories, minerals, and vitamins. The diet initially consists of whole milk and 22% cream or half and half (12% cream), taken as an equal mixture in quantities of 3 or 4 oz. hourly from 7 A.M. to 7 P.M. Chocolate, malt, and protein supplements may be added if a gain in weight is desired. Skimmed milk may be substituted if the patient is obese.

In the absence of gastric retention, additional foods are prescribed within the first few days of therapy and are increased rapidly until 6 feedings are taken daily. The feedings are selected from the following items: cooked cereals, soft boiled eggs, toast, butter, strained cream soups, custards, puddings, plain cookies, gelatin, and ice cream. After two or three weeks of satisfactory progress, or sooner in the absence of stenosis, with complete relief from ulcer distress, the feedings are replaced by a 3-meal diet consisting of a moderate breakfast and noon meal and a relatively small supper.

All foods should be well cooked and chewed thoroughly. A cup each of coffee and tea may be permitted daily. The following should be avoided: seasonings and spices; meat extractives; alcoholic and carbonated drinks; fried, very hot, or very cold foods; cabbage, turnips, corn; nuts; and sausage, pork, and pork products, except bacon.

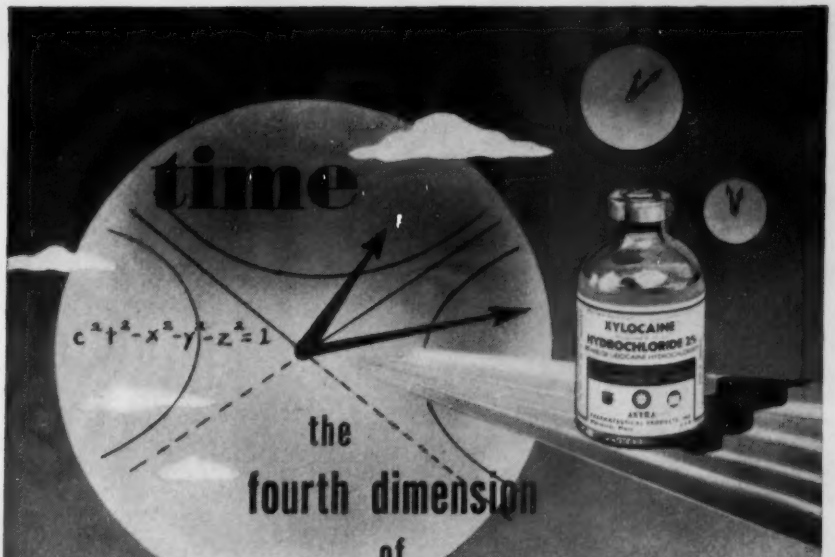
The bland 3-meal diet is continued indefinitely, with further additions as indicated by the progress of the patient. The intake of milk and cream is decreased gradually from hourly to two-hour intervals and ultimately to between meals. The diet as outlined provides protein, carbohydrate, calories, vitamins, and minerals in quantities sufficient to meet nutritional needs.

ANTACIDS

The purpose of antacid therapy is constant neutralization of the continuously secreted acid gastric juice. The most effective antacid in our experience is calcium carbonate. Administered in quantities of 2 to 4 gm. hourly during the day and evening (7 A.M. to 9 P.M.), calcium carbonate often maintains the *p*H of the gastric content between 4 and 5, thus eliminating the hydrochloric acid and peptic activity. Calcium carbonate, except in rare instances, does not cause alkalosis; its constipating effect may be counteracted with magnesium carbonate, 2 gm., substituted for the calcium carbonate as often as needed to regulate bowel function.

Numerous other antacids are also available. Aluminum hydroxide, 4 to 8 cc.; aluminum phosphate or magnesium trisilicate, 2 gm.; tribasic calcium phosphate, 2 gm.,

(Continued on page 128)



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Stocked by leading wholesale druggists and surgical supply houses as a ½%, 1% or 2% solution without Epinephrine and with Epinephrine 1:100,000. 2% solution is also supplied with Epinephrine 1:50,000. All solutions dispensed in 50cc. and 20cc. multiple dose vials, packed 5x50cc. or 5x20cc. to a carton.

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A 4th dimensional approach to preferred local anesthesia

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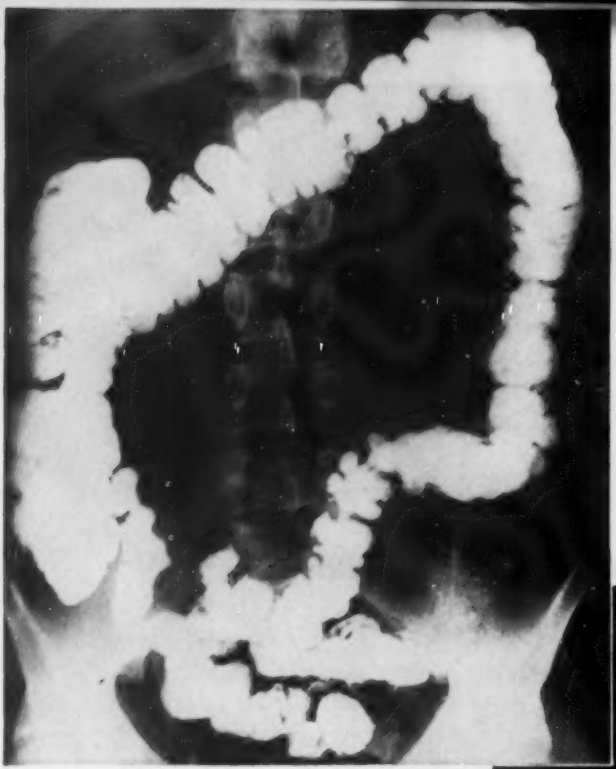
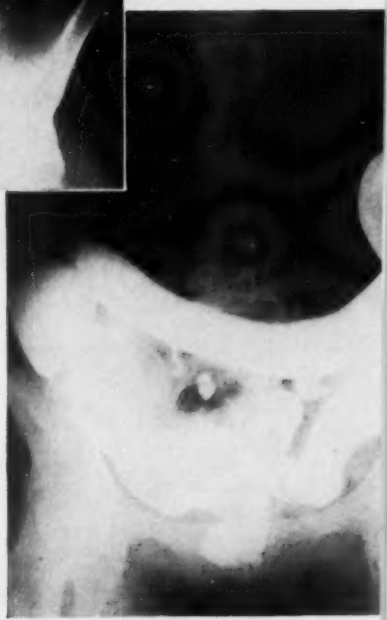
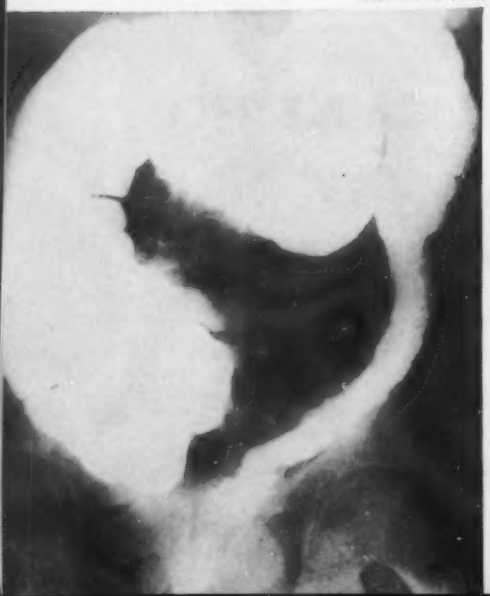


Normal Colon



Ulcerative Colitis

Atonic Colon



To initiate the normal defecation reflex, the "smoothage" and bulk of Metamucil® provide the needed gentle rectal distention.

Smoothage and Bulk in Correcting Constipation

Once the habit of constipation has been established, due to any of a large number of causes, it assumes the aspect of a major problem. Self-medication with irritant or chemical laxatives, or repeated enemas, usually causes a decreased, sluggish defecation reflex and may result in its complete loss.

Rectal distention is a vital factor in initiating the normal defecation reflex, and sufficient bulk is thus of obvious importance in restoring this reflex. Metamucil provides this bulk in the form of a smooth, nonirritating, soft, hydrophilic colloid which gently distends the rectum and thereby initiates the desire to evacuate. Metamucil also demands extra fluid intake, thus imparting even greater smoothage to the intestinal contents.

It is indicated in chronic constipation of various types—including distal colon stasis of the "irritable colon" syndrome, the atonic colon following abdominal operations, repression of defecation after anorectal surgery and in special conditions such as the management of a permanent ileostomy. Metamucil is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent.

The average adult dose is one rounded teaspoonful of Metamucil powder in a glass of cool water, milk or fruit juice, followed by an additional glass of fluid if indicated.

Metamucil is supplied in containers of 4, 8 and 16 ounces. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.

CHOICE OF FOOD

Breakfast

1 serving of:
- Fruits
- Orange or grapefruit juice
- Peach, prune, pear, or apricot purée
- Applesauce
- Skinless baked apple

Cereals:
- Rice Krispies
- Puffed Rice
- Cream of Wheat
- Oatmeal (well-cooked)
- Boiled rice

Eggs (1 or 2):
- Soft cooked, boiled, or poached
- Scrambled with milk in double boiler

Toasted white bread and butter (1 or 2 slices)

1 cup of:
- Coffee
- Tea
- Sanka
- Chocolate

Milk, cream, sugar, and butter as desired

Dinner

Strained cream soups:
- Rice
- Pea
- Potato
- Celery
- Asparagus
- String bean
- Carrot
- Tomato
- Mushroom
- Chicken

1 serving of:
- Baked potatoes
- Mashed potatoes
- Rice
- Spaghetti
- Macaroni
- Noodles

Cheese:
- American
- Cream
- Cottage

Vegetables, strained, puréed, or cooked until soft:
- Carrots
- Beets
- Asparagus
- Green beans
- Peas
- Squash
- Spinach

Meat and fish (1 small serving):
- Roast chicken or turkey
- Creamed chicken or turkey
- Stewed chicken
- Broiled whitefish
- Minced or diced beef with gravy
- Scraped beef
- Roast lamb, beef, or mutton
- (Broiled steak, lamb chops, and veal may be taken after two or three months if thoroughly masticated.)

Desserts (1 serving):
- Bavarian cream
- Lemon or grape sponge
- Blancmange
- Ladyfingers
- Vanilla, caramel, or tapioca custard
- Arrowroot cookies
- Vanilla wafers
- Cornstarch pudding
- Ice cream
- Plain, sponge, or angel food cake
- Butterscotch, jelly, or custard roll
- Milk
- Jello with whipped cream
- Bread and butter

Supper
- Soup (see Dinner list)
- Rice, Cream of Wheat, or soft egg
  or
  light cheese or egg dishes, such as soufflés, omelets, creamed eggs, or macaroni and cheese
- Crackers *or* buttered toast or bread
- Desserts (see Dinner list)
- Milk

REPRESENTATIVE 3-MEAL DIET

Breakfast
- Orange juice, 4 oz.
- Egg, soft cooked
- Toast and butter, 2 slices
- Farina, with 600 cc. cream and 2 tsp. sugar
- Coffee, 1 cup

Lunch
- Strained cream soup and 2 crackers
- Broiled breast of chicken
- Baked potato with butter
- Carrots
- White bread, 1 slice with butter
- Ice cream and 2 vanilla wafers
- Milk, 8 oz.

Supper
- Strained cream soup and 2 crackers
- Omelet
- Toast, 1 slice with butter
- Layer cake
- Milk, 8 oz.
- (The evening meal should be small in quantity and eaten early, preferably by 6 P.M.)

How MULL-SOY *feeding from birth dispels the shadow of major allergy*

in potentially allergic infants

POTENTIALLY ALLERGIC CHILDREN (offspring or siblings of one or more persons with one or more allergic diseases)	NO. OF CHILDREN	INCIDENCE OF MAJOR ALLERGY TO 6 YEARS
CONTROL GROUP #1* (siblings of experimental group)	65	64.6%
CONTROL GROUP #2* nonrelated; (carefully selected from 4,710 children in 1,215 allergic families for similar parental and sibling allergic backgrounds)	175	52.0%
EXPERIMENTAL GROUP (Cow's milk withheld from birth; 3 breast fed, 5 on meat base formulas, 88 on MULL-SOY; cow's milk introduced later)	96	14.6%

% 10 20 30 40 50 60 70 80 90 100

*Observed for same lengths of time as counterparts in experimental group. Table adapted from: Glaser, J., and Johnstone, D. E.: Prophylaxis of Allergic Disease in the Newborn, J. A. M. A. 153:620, Oct. 17, 1953.

MULL-SOY® Liquid

the original hypoallergenic soy food —clinically successful for *20 years* in the prophylaxis, diagnosis, and therapy of milk allergy

comparable to cow's milk in protein, fat, carbohydrate, and minerals—palatable—easily digested—and as easy to use as evaporated milk

Standard dilution 1:1 with water

In 15½-fl.oz. tins through all drug outlets

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alone and in various combinations effect some decrease in gastric acidity. In the uncomplicated ulcer, these compounds provide symptomatic relief.

Anion exchange resins and sodium carboxymethylcellulose also neutralize gastric acidity partially in man. However, they do not appear to offer any striking advantage over other antacids. Bismuth salts and hog gastric mucin are of no value. Protein hydrolysates may decrease the free acid temporarily; this effect often is followed by a secondary rise in acidity exceeding original levels. Detergents such as sodium alkyl sulfate, though abolishing peptic activity in vitro, do not demonstrably reduce peptic activity in man.

Antacids act locally upon the gastric contents. Since they do not alter the function of the acid-secreting cells, their neutralizing effect is temporary and disappears when the medication is discontinued. Antacid therapy, to maintain its effectiveness, consequently must be prolonged. The hourly administration of calcium carbonate is continued until the ulcer has healed completely. The antacid then is prescribed at intervals of two and three hours and, subsequently, once or twice between meals and in the evening. Most patients maintain this program for long periods of time.

Administration of small quantities of comparatively mild antacids immediately after meals does not depress gastric acidity significantly; the food itself will exert a buffering and neutralizing effect upon the gastric contents. Antacids in tablet form are less effective than powders; however, their use may be permitted occasionally for convenience as adjunct therapy. Potent antacid tablets would be of considerable practical usefulness in the ambulatory management of peptic ulcer.

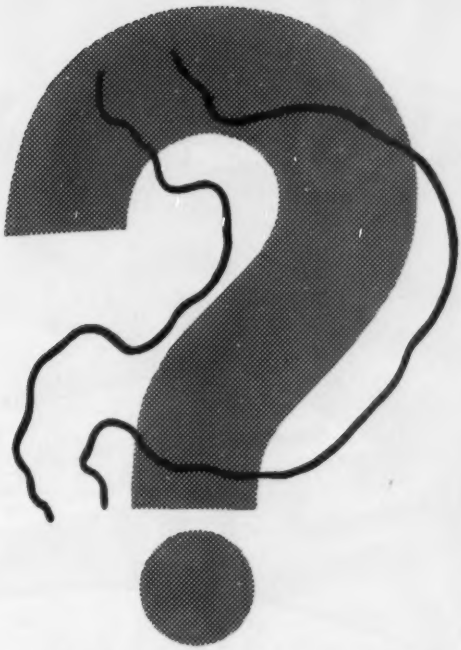
Gastric acidity also may be neutralized effectively by the continuous administration of milk, cream, and alkali, introduced together or separately through an intragastric tube. The antacid is prepared by mixing 100 cc. of aluminum hydroxide or aluminum phosphate gel with 300 or 400 cc. of warm tap water. The solution is administered at a rate of 15 or 20 drops per minute; 1,500 cc. may be given in twenty-four hours. The intragastric drip may be administered for the twelve-hour night period or maintained constantly day and night for variable periods.

The procedure has been recommended in patients with hypersecretion or severe ulcer pain and, occasionally, in the treatment of massive hemorrhage. It is contraindicated in the presence of pyloric obstruction. The intragastric drip is not practical for general or prolonged use. In our experience it has seldom been necessary.

GASTRIC ANTISECRETORY COMPOUNDS

Anticholinergic drugs may decrease the output of hydrochloric acid presumably by inhibiting the function of the parietal cells. Atropine sulfate, 0.5 mg. (1/120 gr.) three or four times daily by mouth

(Continued on page 134)



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to correct **HYPERACIDITY**

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*Tainter, M. L., et al: Papain, Ann. New York Acad. Sc. 54:143-296 (May) 1951.

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or intramuscularly, reduces the volume of gastric secretion and output of acid in approximately one-fourth of patients with duodenal ulcer. Systemic manifestations of parasympathetic inhibition, including dryness of the mouth, blurring of vision, tachycardia, palpitation, and toxic psychosis, are frequent with quantities adequate to inhibit gastric secretion.

The chief advantage of atropine and similar compounds in ulcer therapy may be to delay gastric emptying, thereby permitting more effective neutralization by antacids. Atropine substitutes, including Syntropan, Novatrin, Trasentine, Dibuline, and Bentyl hydrochloride, do not appear to offer any special advantages in the management of peptic ulcer.

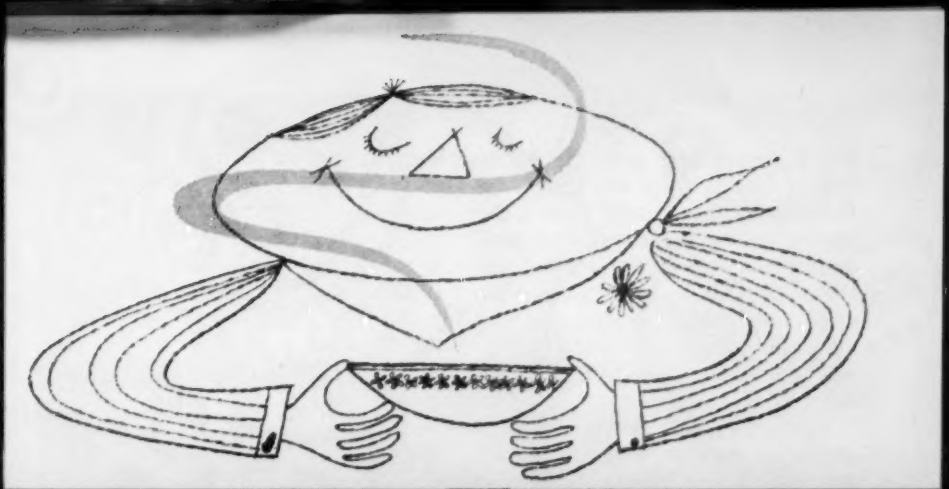
Tetraethylammonium chloride or bromide administered parenterally and hexamethonium salts taken by mouth are capable of inhibiting the output of acid temporarily. However, these compounds also may cause disturbing side effects, including postural hypotension and intestinal atony.

Banthine temporarily suppresses gastric acidity when administered intramuscularly in doses exceeding 0.03 mg. per kilogram of body weight. The antisecretory effect is much less pronounced after oral administration. Single doses of 50 or 100 mg. of Banthine by mouth may lower the volume of secretion partially; the concentration of free acid usually is unchanged. Symptomatic relief may be obtained with quantities of 50 or 100 mg. by mouth four times daily; however, side effects are very frequent. Recurrences of peptic ulcer have been observed during the use of Banthine. After long-continued administration, patients occasionally appear to develop a tolerance to the drug.

The antisecretory effect of Prantal resembles that of Banthine. However, side effects are much less frequent, and 400 mg. or more may be taken by mouth daily for long periods of time without discomfort.

Many new antisecretory compounds have been introduced recently and are undergoing evaluation. Anacidity has been observed temporarily in patients with duodenal ulcer following the oral administration of single doses of Pamine, 5 to 10 mg.; Pro-Banthine, 30 to 50 mg.; Monodral, 5 to 10 mg.; and Antrenyl, 25 mg. The daily doses of these compounds on the basis of current evidence *tentatively* are: Pamine, 15 to 30 mg.; Pro-Banthine, 60 to 100 mg.; Monodral, 15 to 30 mg.; and Antrenyl, 10 to 30 mg. Doses are administered in divided amounts three or four times daily. Other new compounds include Darstine, Lusyn, Centrine, Malcotran, and Elorine.

The antisecretory effects when present are limited to the period of administration of the drug. In general, the compounds most effectively lowering the output of acid also tend to evoke more uncomfortable systemic manifestations of parasympathetic inhibition. Inhibition of the fasting or so-called basal gastric secretion does not necessarily reflect sustained potency under clinical therapeutic conditions. The output of hydrochloric acid pro-



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packaging: available in 2-ounce shakers and 8-ounce bottles.
Send for liberal supplies of tasting samples and low-sodium diet sheets for your patients.

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duced during and after the ingestion of food is much less readily influenced by these drugs than is the fasting gastric secretion. *The ideal antisecretory agent, suppressing gastric acidity for long periods of time after oral administration without development of tolerance and with minimal or no side effects, thus far has not been found.*

Currently available anticholinergic drugs may prove useful as *adjuncts* to antacid therapy, permitting a more efficient yet practical program of neutralization during the day and more effective control of the excessive nocturnal gastric secretion in duodenal ulcer than has been possible heretofore. However, prolonged and carefully controlled study will be required to determine their ultimate value in the treatment of peptic ulcer.

The use of such compounds only in the management of peptic ulcer is not recommended; recurrences may be anticipated with this type of limited therapy. Anticholinergic drugs are contraindicated in the presence of pyloric obstruction, incipient glaucoma, prostatic hypertrophy, cardiac failure, and cardiospasm.

Antihistaminic compounds such as Benadryl and Pyribenzamine do not lower gastric acidity significantly in man and are of no value in the treatment of peptic ulcer. Present concentrates of enterogastrone, extracted from the mucosa of the upper small intestine of hogs, do not inhibit gastric secretion consistently and apparently do not prevent recurrences of peptic ulcer.

Endocrine preparations, including parathyroid extract, posterior pituitary extract, sex hormones, and desoxycorticosterone acetate, do not reduce gastric secretion significantly in patients with duodenal ulcer and consequently are of no value in ulcer therapy. Compounds inhibiting the enzyme, carbonic anhydrase, may lower the output of hydrochloric acid in dogs after intravenous administration, but large oral quantities do not demonstrably influence gastric secretion in man.

GASTRIC ASPIRATION

Nightly aspiration of the stomach with an Ewald tube is useful in hospitalized patients with gastric retention since it removes a considerable quantity of acid gastric content otherwise bathing the ulcer and maintaining its chronicity.

Gastric aspiration is a very effective method of relieving severe ulcer distress. The procedure also may contribute important information regarding the desirability of continued medical management, for a decrease in the nightly aspiration to a volume of 3 or 4 oz. suggests that the obstruction was caused by inflammation, edema, and spasm rather than cicatricial stenosis. Persistently large aspirates, on the other hand, indicate the presence of organic obstruction, necessitating surgical intervention.

The electrolyte and fluid balances require careful attention in patients treated with gastric aspiration because of the tendency to hypochloremia and alkalosis. The quantities of chloride, sodium, potassium, and fluids to be administered intravenously are determined by fre-

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quent measurements of the serum electrolytes, the urinary output, and the daily excretion of chloride in the urine.

ROENTGEN IRRADIATION

Roentgen irradiation of the stomach may be utilized as adjunct therapy for the purpose of decreasing or suppressing completely the secretion of hydrochloric acid. Approximately 1,600 to 2,000 roentgen units, total depth dose, are directed in 10 divided applications to the fundus and body of the stomach over fluoroscopically outlined anterior and posterior portals.

The inhibitory effect of irradiation upon gastric secretion depends upon the destruction of parietal cells. The development of anacidity is followed invariably by complete healing of the ulcer and by no recurrence for the duration of the anacidity. Although the secretory inhibition usually is quite variable and temporary, the clinical course in many patients seems sufficiently benefited to justify the procedure as an adjunct to standard therapy.

TOBACCO

The use of tobacco is dealt with most effectively on an individual basis. The moderate use of tobacco seems without harm in many instances; excessive smoking, on the other hand, is unwise and should be discouraged. In such instances, the recommendation of complete abstinence is preferable to the generally ineffectual suggestion of decreasing the quantity of tobacco. Excessive smoking usually is a reflection of increased nervous tension. Therefore, the important problem would seem to be relief of the emotional stress.

FATIGUE AND STRESS

Excessive physical fatigue and emotional stress, especially prolonged anxiety, resentment, frustration, or hostility, may increase the secretion of hydrochloric acid and the susceptibility of the gastroduodenal mucosa to injury. Rest and the relief of emotional tension, consequently, are important adjuncts in the management of the ulcer patient. The needs vary with the individual case. Some patients can adjust their daily routine to obtain more rest without discontinuing their work; others respond more effectively to a vacation.

Hospitalization for several weeks is desirable in patients with persistent severe ulcer distress and especially in the management of recurrent peptic ulcer. Hospitalization provides an opportunity for careful regulation of therapy, permits more thorough indoctrination with the principles of treatment, and removes the patient, at least temporarily, from the stress-producing environment.

Management of the emotional problems depends initially upon the identification of the disturbing factors—domestic, social, or environmental—and then intelligent efforts at their control by avoidance, reorientation, or release of tension in pleasant recreational activities. The ultimate goals are the establishment of regular habits and a "life of moderation." The support provided

(Continued on page 142)

when nausea and vomiting bring a plea for help . . .

suggest first aid with . . .

EMETROL®

PHOSPHORATED CARBOHYDRATE SOLUTION

a safe, pleasant-tasting, oral antiemetic . . .

effective in 6 out of 7 cases of functional vomiting[1] . . . reduces gastrointestinal smooth muscle contractions physiologically . . . contains no antihistaminics, barbiturates, or other drugs . . . also useful in nausea of pregnancy, and for drug- or anesthetic-induced vomiting

1. Bradley, J. E., et al.: J. Pediat. 38:41, 1951; Idem: Amer. Acad. Pediat., meeting Oct. 16, 1951.

IMPORTANT: EMETROL is stabilized at an optimal physiologic pH level. Dilution would upset this careful balance. For this reason, EMETROL is always taken straight, and no fluids of any kind are allowed for at least 15 minutes after administration.

Supplied:
In bottles of 3 fl.oz. and 16 fl. oz., at pharmacies everywhere

Kinney®

write for complete literature

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In the six months since ACHROMYCIN was first announced** at the Antibiotics Symposium of the Food & Drug Administration, this new broad-spectrum antibiotic has become a major weapon in modern medicine.

ACHROMYCIN has demonstrated notable effectiveness in a wide variety of clinical applications and the following characteristics are outstanding:

ACHROMYCIN is effective against pneumococci, staphylococci, beta hemolytic streptococci, gonococci, meningococci, *E. coli* infections, acute bronchitis and bronchiolitis, pertussis and the atypical pneumonias, as well as virus-like and mixed organisms.

ACHROMYCIN has definitely fewer side-reactions.

ACHROMYCIN provides more rapid diffusion in body tissues and fluids.

In solution, ACHROMYCIN maintains effective potency for a full 24-hours.

ACHRO

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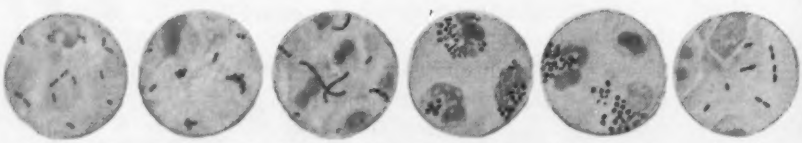
proved effective against



Pneumococci | Staphylococci | Beta Hemolytic Streptococci | Gonococci | Meningococci | *E. coli*

NOW AVAILABLE:

CAPSULES: 50, 100, 250 mg. • PEDIATRIC DROPS: Cherry Flavored, 10 cc. vials, 100 mg. per cc., Approximately 25 mg. per 5 drops. • ORAL SUSPENSION: Cherry Flavored, 1 oz. vials, 250 mg. per teaspoonful (5 cc.) • TABLETS: 50, 100, 250 mg. • SPERSOIDS*: Dispersible Powder, Chocolate Flavored, 12 and 25 dose bottles, 50 mg. per rounded teaspoonful (3 Gm.) • INTRAVENOUS: 100, 250, 500 mg. • *Other dosage forms are being developed as rapidly as research permits.*

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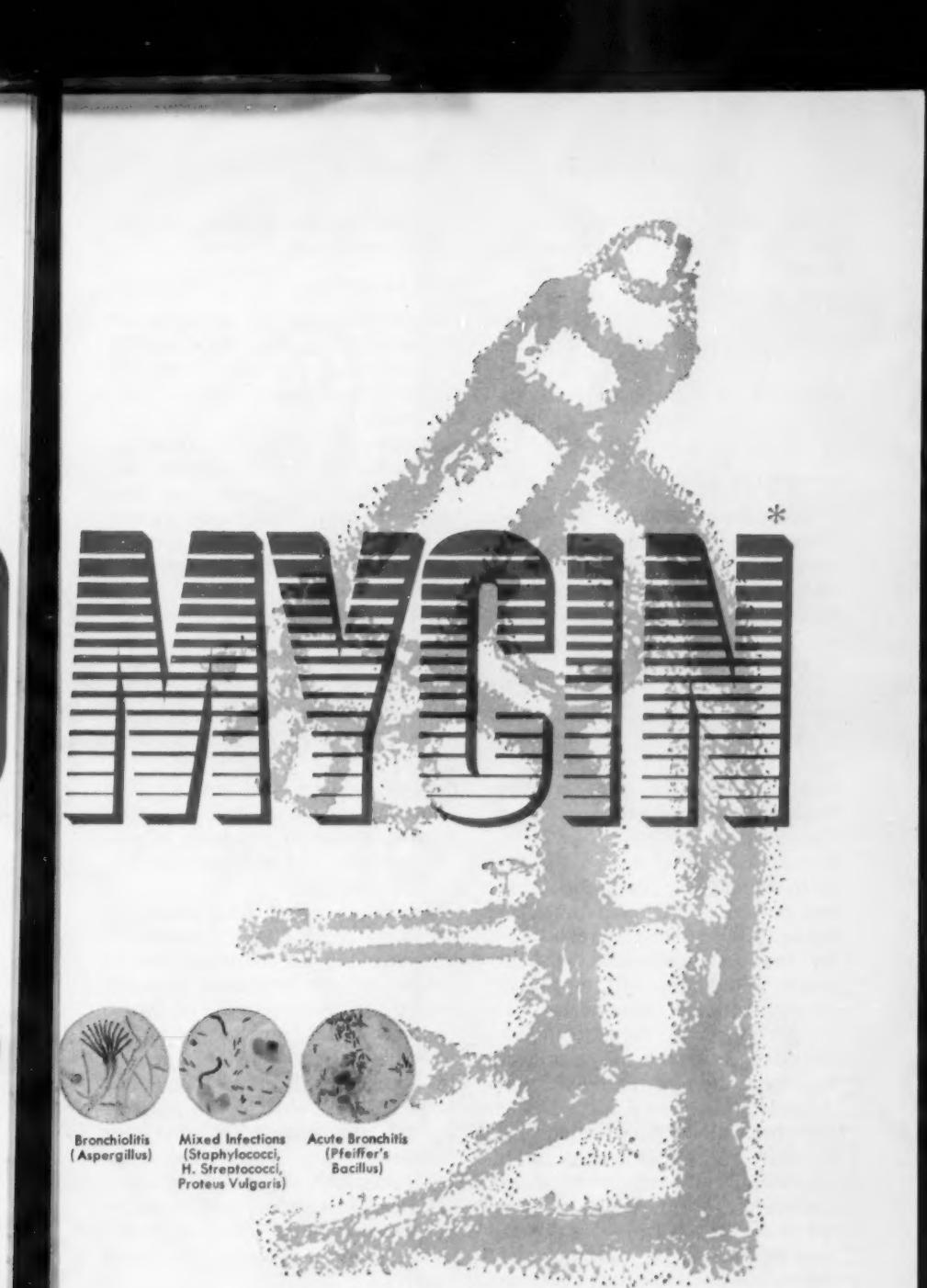
*REG. U.S. PAT. OFF.


MYCIN*
Bronchiolitis (Aspergillus)
Mixed Infections (Staphylococci, H. Streptococci, Proteus Vulgaris)
Acute Bronchitis (Pfeiffer's Bacillus)

by the friendly yet objective physician may be very helpful in this regard.

Mild sedation with phenobarbital, 30 mg. (½ gr.) four times daily, or elixir of triple bromides, 4 cc. (1 tsp.) four times daily, promotes relaxation and rest. Sedatives at night are useful in ensuring an adequate amount of sleep.

BENIGN GASTRIC ULCER

The differentiation of malignant from benign ulcer, though difficult, is possible in the majority of cases when all diagnostic methods are utilized, including roentgenographic, gastroscopic, and exfoliative cytologic examinations.

All patients with gastric ulcer should be hospitalized. Treatment must be adapted to the individual case. Strict antacid therapy is permissible when the total evidence indicates a benign ulcer and when the course of the lesion can be observed carefully at intervals of seven to ten days by roentgenographic and gastroscopic examinations. The therapeutic test may be maintained for four to eight weeks, with periodic reevaluation of the clinical course. Medical management may be continued in the presence of objective evidence of significant healing of the ulcer crater.

Gastric resection is indicated under the following conditions: [1] inability to exclude malignant ulceration, [2] all ulcers on the greater curvature of the stomach, recognizing that such lesions occasionally may be benign, [3] ulcer persisting despite adequate medical treatment, [4] recurrent bleeding, and [5] gastric ulcer complicated by delayed gastric emptying.

COMPLICATIONS

Approximately 10 to 15% of patients with peptic ulcer require surgical therapy primarily for the complications, less frequently for the lesion itself.

Acute perforation is the most urgent indication for operation. Although remarkable results have been obtained from continuous gastric suction and chemotherapy, surgical intervention remains the preferred procedure.

Stenosis is the most frequent indication for surgery in patients with duodenal ulcer. The obstruction in many instances is caused by inflammatory edema and spasm about the ulcer rather than by scar tissue; it usually subsides within seven to ten days of medical management. The improvement is evident clinically from the decreasing quantity of gastric aspirate and the maintenance of body weight.

Operation is indicated under the following conditions: [1] persistent vomiting, [2] the continued loss of weight, [3] the continued presence of 300 to 500 cc. or more of gastric content in the nightly aspiration, [4] visible gastric peristalsis, and [5] the roentgen demonstration of a large dilated stomach with narrowing of the pyloric or duodenal lumen to 3 mm. or less. The surgical procedure of choice is transabdominal vagotomy and posterior gastroenterostomy, although partial gastrectomy is preferred by many surgeons.

The treatment of *massive hemor-*

the

Plus

needed for complete anemia therapy

Heptuna® *Plus*

a vitamin-mineral formulation rich in iron, vitamin B_{12} and folic acid

each capsule contains:

Ferrous Sulfate U.S.P.	4.5 gr.
Vitamin B_{12}	5 mcg.
Folic Acid	0.33 mg.
Ascorbic Acid	50 mg.
Vitamin A	5,000 U.S.P. Units
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Thiamine Hydrochloride	2 mg.
Riboflavin	2 mg.
Pyridoxine Hydrochloride	0.1 mg.
Niacinamide	10 mg.
Calcium Pantothenate	0.33 mg.
Cobalt	0.1 mg.
Copper	1 mg.
Molybdenum	0.2 mg.
Calcium	37.4 mg.
Iodine	0.05 mg.
Manganese	0.033 mg.
Magnesium	2 mg.
Phosphorus	29 mg.
Potassium	1.7 mg.
Zinc	0.4 mg.

With other B-Complex Factors from Liver.

ROERIG Rx

536 Lake Shore Drive, Chicago 11, Illinois

rhage requires absolute rest in bed, frequent measurement of the pulse and blood pressure, and sedatives for restlessness. The blood type of the patient should be determined and appropriate blood made available immediately. The hemoglobin and erythrocyte count or the hematocrit should be measured daily or as often as the clinical course indicates.

If the patient is vomiting, food and drink are withheld until the vomiting subsides. In the absence of nausea or vomiting, milk and cream and calcium carbonate are administered hourly during the day, as in the standard program. The alkali is continued every two hours during the night. Transfusions of 500 to 600 cc. of whole blood are administered when the systolic blood pressure falls to 100, the pulse rate exceeds 100, and the erythrocyte count decreases to below 3 million, or in the presence of continued severe hemorrhage, regardless of the above criteria. Glucose, 5%, in isotonic saline may be given in limited quantities subcutaneously.

Additional measures include repeated oral or parenteral administration of effective gastric antisecretory drugs and, very occasionally, the intragastric drip. As adjunct therapy, powdered Gelfoam, 3 gm. (45 gr.), and bovine thrombin, 500 units, in 500 cc. of a buffer solution of *p*H 7 or in 250 cc. (8 oz.) of milk and cream, freshly mixed in a Waring blender, may be administered by mouth every two to four hours; personal experience with this therapy is limited.

This program is maintained until the erythrocyte count and hematocrit are stabilized and the feces are negative for occult blood. Subsequent treatment is that outlined for uncomplicated peptic ulcer.

In patients with gastrointestinal bleeding of unknown origin, early roentgenographic and gastroscopic examinations may be indicated to establish the diagnosis and the appropriate therapy. The treatment of massive hemorrhage should be under the supervision of a medical-surgical team.

The possible need for surgery requires constant consideration, especially in patients 45 years of age and older with persistent severe bleeding from an eroded sclerotic artery. When 2 or more transfusions per day or during a fraction of a day are insufficient to replace the blood lost and the bleeding continues (the so-called test of transfusion), emergency surgery may be the more conservative procedure. The operative treatment should include ligation of the bleeding vessel if possible, resection of the ulcer, or gastric resection. Gastroenterostomy alone is of little or no value. In patients with severe hemorrhage recurring despite adequate medical management, surgical therapy may be elected during an interval between episodes of bleeding.

Jejunal ulcer presents a difficult therapeutic problem because of the tendency of the lesion to penetrate, bleed, and perforate. Some patients respond satisfactorily to careful medical management in the hospital, including roentgen irradiation of the stomach. As a general rule, however, transabdominal vagotomy

with or without further gastric resection, depending on the circumstances, is preferred.

Gastrojejunocolic fistula requires initially the restoration of nutrition with a diet high in proteins, calories, and supplements and the correction of electrolyte and fluid imbalance. The operative procedure consists in resection of the fistula, reconstruction of the gastroenterostomy, a more adequate gastric resection, or vagotomy.

PREVENTION OF RECURRENCES

Peptic ulcer recurs frequently with almost any type of therapy, medical or surgical, which does not abolish acid secretion permanently. The precipitating factors recognized and emphasized most often are physical fatigue, emotional stress, dietary indiscretions, and intercurrent illness.

There are no specific measures completely protecting against recurrences, except the production of anacidity. However, the tendency to recurrences may be lessened and their severity decreased by a comprehensive program including:

1] Thorough treatment of the initial lesion and careful supervision of the patient subsequently

2] Education of the patient as to the nature of the disease and the principles and objectives of ulcer therapy

3] Continued use of a bland diet

4] A practical but efficient program of acid neutralization and inhibition

5] The avoidance of gastric irritants, including alcohol, tobacco, and such drugs as corticotropin, cortisone, phenylbutazone, and excessive quantities of salicylates

6] Sufficient rest and sleep

7] If possible, control of the emotional problems, emphasizing reorientation of the patient, the release of tension, and the establishment of a "life of moderation"

8] Proper care of respiratory infections and other intercurrent illnesses.

Resumption of a careful antacid and dietary program during periods of unavoidable physical and mental stress and during intercurrent illness constitutes perhaps the most important practical approach to the problem of ulcer recurrence.

Method of Dr. Ruffin

The clinical picture of peptic ulcer and its complications is so variable that it is impossible to outline a standard treatment which is applicable to all cases. For example, the problem presented by an acute duodenal ulcer of short duration is totally different from that of a recurrent ulcer which has existed intermittently for years. The first type of case is relatively simple, and with intelligent medical care and explanation of the various known factors in the etiology of ulcer, clinical recovery is the rule.

On the other hand, the patient who has had numerous recurrences will require longer periods of hospitalization, stricter attention to diet and medication, and careful regulation of his daily activities, and even with the best of care one can reasonably expect a recurrence sooner or later.

(Continued on page 150)

New

ANTIBIOTIC RECTAL CONES

"Premocones"

Hemorrhoidal Suppositories

ANTIBIOTIC - ANAESTHETIC

A new and superior formula which reduces incidence of infection, relieves pain and discomforts associated with hemorrhoids and minimizes anal leakage. In addition, Premocones exert a protective action by coating the inflamed hemorrhoids, thus promoting faster healing.

Packaged in a handy, easy to carry slide box of 12.

FREE Physicians' sample

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Premo Pharmaceutical Laboratories, Inc.
South Hackensack, N. J.

Please rush me samples of Premocones.

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prompt and prolonged relief from

allergic dermatitis, pruritus ani

SURFADIL*

(Cyclomethycaine and Thenylpyramine, Lilly)

. . . valuable in pruritus ani; contact dermatitis caused by poison ivy, oak, or sumac, drugs, chemicals, paints, plastics, or clothing; eczema; insect bites; heat rash; and sunburn.

'Surfadil' Lotion

for weeping dermatitis
in 75-cc. (plastic spray) and 1-pint bottles
New formula: Titanium Dioxide replaces Zinc Oxide; covers skin five times better, reflects sun's rays. Flesh-tone in color.

'Surfadil' Cream

for dry dermatitis
in 1-oz. tubes and in 1-lb. and 5-lb. jars

* Formerly 'Histadyl' (Thenylpyramine, Lilly) and 'Surfacaine' (Cyclomethycaine, Lilly)

ELI LILLY AND COMPANY, INDIANAPOLIS 6, INDIANA, U.S.A.

Within the past few years, the anticholinergic drugs have been introduced in the treatment of ulcer and are now widely used. Those available today are Banthine, Prantal, Antrenyl, and Pro-Banthine. These drugs are useful *adjuncts* in the management of the *active* phase of peptic ulcer. Their most striking clinical effect is the relief of ulcer pain, particularly following parenteral administration.

These agents have proved disappointing in the long-term management of ulcer, since recurrences are not prevented and the incidence of complications or the need for surgery is not significantly altered by their prolonged administration. *The agents should supplement conventional medical management, never replace it.*

DUODENAL ULCER

Active Phase

A. MILD

1] Initial bed rest (hospitalization five to seven days) when practicable

2] Bland diet with feedings six times a day; night feedings and antacids when awakened by ulcer distress

3] Antacids, such as Amphojel 30 cc. (1 oz.) three times daily between meals

4] Belladonna, starting with 0.6 cc. (10 minims) three times daily before meals and increasing daily up to physiologic effect, using anticholinergic drugs if necessary

5] Sedation, 30 mg. (½ gr.) phenobarbital three times daily, when indicated

6] Mild alkaline laxatives when necessary

7] Early roentgenographic examination desirable; gastric analysis indicated; gastroscopy unnecessary

8] Gradual increase of diet as symptoms subside

9] Follow-up study, including roentgenograms, depending upon individual case

B. MODERATE TO SEVERE

As above, except:

1] Bed rest mandatory, preferably hospitalization

2] Bland diet with feedings every two hours throughout waking hours

3] Antacids every four hours

4] Anticholinergic drugs instead of belladonna

a] Banthine, 100 mg. four times daily or, if pain is severe, 50 mg. intramuscularly every six hours

b] Pro-Banthine, 30 mg. four times daily orally or, if pain is severe, 10 to 20 mg. intramuscularly every six hours

5] Sedation as above

6] Continuous night suction

7] Alcohol and tobacco forbidden

8] Operation only when medical management, including hospitalization, fails to effect recovery

In patients with intractable pain in whom a walled-off perforation is suspected, operation should be advised without delay.

Quiescent or Interim Phase

1] Usual activities in moderation; strenuous exercise forbidden

2] Bland diet, including milk, eggs, cereal, toast, well-prepared meat, tender vegetables, simple desserts; 3 regular meals per day with intermediate feedings (milk, cereal, crackers) at midmorning, midafternoon, and before retiring

3] Medication unnecessary as a rule

4] Careful attention to bowels; mineral oil or milk of magnesia as indicated

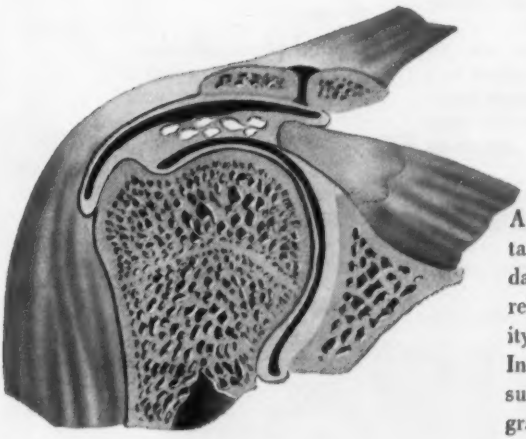
5] Tobacco and alcohol eliminated if possible, otherwise in strict moderation

in chronic calcific tendinitis–

"unusually good results"[1]

"easy, safe, and free of side-reactions"[1]

"adaptable for routine office use"[1]



A 1-cc. injection of sustained-action MY-B-DEN, daily or every other day, relieved pain and disability in 44 out of 53 patients. In nine patients awaiting surgery, relief was "so gratifying" that operation was cancelled.[1] Equally successful results have been reported by other investigators.[2,3]

MY-B-DEN®

(adenosine-5-monophosphate)

Supplied: MY-B-DEN Sustained-Action in gelatine solution: 10 cc. vials in two strengths, 20 mg. per cc. and 100 mg. per cc. adenosine-5-monophosphate as the sodium salt.

1. Susinno, A. M., and Verdon, R. E.: J.A.M.A. *154*:239 (Jan. 16) 1954.
2. Rottino, A.: Journal Lancet *71*:237, 1951.
3. Pelner, L., and Waldman, S.: New York State J. Med. *52*:1774 (July 15) 1952.

"pioneers in adenylic acid therapy" Bischoff

ERNST BISCHOFF COMPANY, INC · IVORYTON, CONNECTICUT

6] Frequent follow-up study, including roentgenograms

7] Recurrence treated as an *active phase*

GASTRIC ULCER

1] Same as duodenal ulcer, *active phase*

2] Hospitalization highly desirable

3] Follow-up study at weekly intervals by gastroscopic or roentgenographic examination or both

4] If the ulcer crater has not decreased appreciably in size within two or three weeks and if complete healing has not taken place within four to six weeks, resection is definitely indicated.

MARGINAL (JEJUNAL OR STOMAL) ULCER

1] Same as duodenal ulcer, *active phase*

2] Roentgenographic and gastroscopic examinations both advisable

3] Operation when medical measures fail

PYLORIC OBSTRUCTION

1] Hospitalization definitely indicated

2] Nothing by mouth for twenty-four to forty-eight hours

3] Continuous gastric suction, following lavage with a large tube

4] Parenteral fluids, including B complex vitamins and vitamin C

5] Atropine, 0.3 to 0.6 mg. (1/200 to 1/100 gr.) every four hours up to physiologic effect

6] Anticholinergic drugs contraindicated in high-grade retention with dilated stomach; may be of value in acute retention due to edema and spasm

7] Sedation, 30 mg. (½ gr.) phenobarbital three times daily as necessary

8] Liquid diet on second or third day with continuous suction during night

9] Early roentgenographic examination desirable; repeat at weekly intervals until retention subsides

10] If the amount of retention as demonstrated by roentgenogram does not decrease appreciably within seven to ten days, it is probable that the obstruction is due to scarring rather than to edema and spasm. In such cases, operation is indicated.

PERFORATION

1] Immediate operation

2] Preoperative period

a] Nothing by mouth

b] Morphine as needed

c] Continuous gastric suction

d] Flat plate of abdomen with patient erect to show air beneath diaphragm

e] Anticholinergic drugs contraindicated

HEMORRHAGE

A. MILD

1] Bed rest; hospitalization preferable

2] Prompt feedings every two hours; bland diet

3] Antacids and antispasmodics as above

4] Anticholinergic drugs unnecessary

5] Sedation, preferably by hypodermic; 100 mg. (1½ gr.) phenobarbital as necessary

6] Stool and blood count and pressure

7] Roentgenographic examination deferred until bleeding has stopped; gastroscopic examination contraindicated

8] Transfusions unnecessary; however, blood should be available

9] Gradual increase of diet as indicated under duodenal ulcer, *active phase*

10] On discharge from hospital, same treatment as duodenal ulcer, *quiescent phase*

NEW

LOW-COST

ESTROGEN-ANDROGEN

THERAPY!

Femandren®

(methyltestosterone with ethinyl estradiol CIBA)

Linguets®

Controls more menopausal symptoms than do estrogens alone

Relieves pain rapidly in osteoporosis

For a tonic sense of well-being in the aged

Bottles of 30 and 100
Scored LINGUETS® (tablets for mucosal absorption CIBA)

*Approximately twice the potency of the same hormones if swallowed. Virtually as potent as steroid injections.

C I B A *Summit, N.J.*

2/2022M

B. MODERATE TO SEVERE

1] Not in shock

a] Feedings withheld if nausea and vomiting are present; otherwise, feeding every two hours (bland diet)

b] Antacids and antispasmodics as above; anticholinergic drugs unwise if surgery is contemplated

c] Blood transfusion when count has dropped appreciably (hemoglobin 50%, red blood count 3,000,000)

d] Operation when it is felt that bleeding will not stop or when patient's life is in danger. Unless an experienced gastric surgeon is available, expectant treatment is desirable.

2] In shock

a] Treat for shock (body kept warm but no external heat applied); elevate foot of bed

b] Parenteral fluids; whole blood preferable, otherwise plasma or glucose

c] Sedatives by hypodermic; no morphine

d] Feedings withheld until patient is out of shock and not nauseated

e] Roentgenographic examination deferred as above; gastroscopic examination contraindicated

f] Anticholinergic drugs contraindicated

g] Operation as indicated above

GASTROENTEROCOLIC FISTULA

1] Hospitalization

2] High-caloric, high-protein diet (3,000 to 4,000 calories per day; 150 to 200 gm. of protein in the form of casein, Amigen, egg albumen)

3] Maintenance of fluids and electrolytes (glucose, Amigen, transfusions)

4] Parenteral vitamins, including intramuscular liver

5] Operation when condition of patient permits

INDICATIONS FOR SURGERY

The simple, uncomplicated duodenal ulcer is not a surgical problem.

1] Perforation

a] Simple closure or, if patient's condition permits, subtotal resection

2] Pyloric obstruction due to scarring

a] Gastroenterostomy (older age group with low acid)

b] Resection (younger age group with high acid or in older age group if condition permits)

3] Marginal ulcer not responding to adequate medical care

a] Resection with or without subdiaphragmatic vagotomy

4] Repeated massive hemorrhage, interim phase

a] Resection

5] Gastric ulcer not responding to treatment or suspected of being malignant

a] Resection

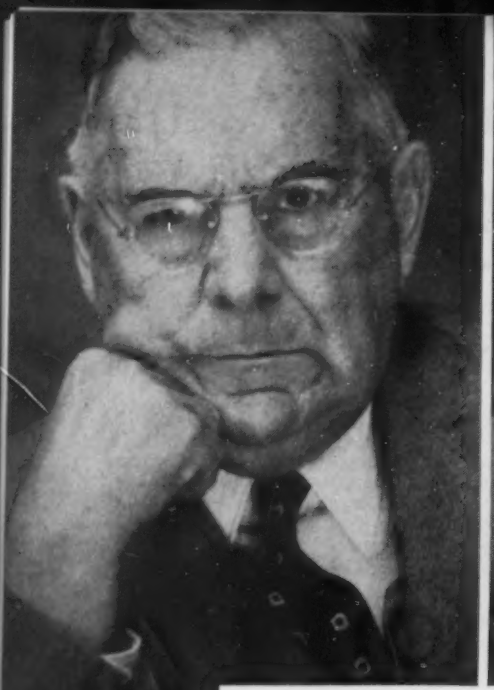
6] Intractable duodenal ulcer

a] Resection

7] Gastroenterocolic fistula

a] "Taking down" fistula

b] Subsequent operation to prevent recurrence of ulcer (resection)



ANXIETY

hides behind many complaints that may be relieved by *RELAXAMINE*®

The value of *Relaxamine* in ridding patients of their anxiety-tension symptoms lies in its multiple and synergistic action.

Each tablet of *Relaxamine* is a balanced formula that:

1. ***Relaxes tense muscles with mephenesin (400mg.)***
2. ***Controls G-I spasms with homatropine methylbromide (1.5 mg.)***
3. ***Calms mental tension with phenobarbital (1/6gr.)***
4. ***Elevates the mood with dextro amphetamine sulfate (1.5 mg.)***
5. ***Avoids drowsiness and toxicity by its small complementary doses***

6. Permits long-term daytime control because effects are non-cumulative

All ingredients have been accepted in N.N.R.

Dosage: 1 to 2 tablets of *Relaxamine* t.i.d. after meals. Also at bedtime if necessary.

Issued: Bottles of 50 and 500 scored tablets.

Write for Complimentary Samples and Literature

The Adams Company
PHILADELPHIA 10, PA.

Relaxamine is Recommended
for relief of patients with
Anxiety State • Nervous Tension
Mental Depression • Menopausal Tension
Senile Tremor • Alcoholic Tremor • Acute Alcoholism
and to relax muscle spasm, interrupt reflex pain and allow greater joint mobility in
Neuromuscular Conditions
Rheumatic Disorders • Rheumatoid Arthritis
Stiff Joints • Osteoarthritis • Bursitis
Torticollis • Low Back Pain • Myalgia

Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-264

THE CLUE

ATTENDING M.D: A 50-year-old man has been in the hospital for two weeks, referred as a patient with Raynaud's phenomenon. He is the president of a large corporation with holdings in Arizona, where he lives, and in the High Sierra Mountains, which he periodically visits. He has been making regular trips into the mountains in winter and summer and, one week ago, within an hour after arriving in a blizzard, his hands became numb and blue to the wrists and his fingers were dead white. He had abdominal discomfort; his urine was dark.

VISITING M.D: Any numbness or cyanosis of the feet?

ATTENDING M.D: No.

VISITING M.D: Of the tip of the nose?

ATTENDING M.D: Yes. In fact, when his nose became blue and numb, he recognized this as a sign of an impending attack. His past history, except for a single similar and severe episode last winter, is quite normal. The previous incident also occurred in the mountains. On each occasion the attack started suddenly when he removed his gloves, and he at once returned to a lower, warmer altitude. On the first occasion the condition subsided; the present attack, however, has persisted and he was flown out to our hospital for consultation.

VISITING M.D: What are the blood serum reactions?

ATTENDING M.D: Negative.

PART II

VISITING M.D: This seems a clear-cut case without diagnostic difficulty, but since you've asked me to see the patient, I suspect there is more than meets the eye or, perhaps I should say, than is at the fingertips. Any evidence of cirrhosis, trypanosomiasis, or other serious physical disease?

ATTENDING M.D: No.

VISITING M.D: The sort of syndrome you have described might appear as a transient phenomenon at the height of such serious illness or during convalescence, but could also occur in the idiopathic state. How dark was the urine?

ATTENDING M.D: On the first occasion it was said to be black.

VISITING M.D: Is the patient anemic?

ATTENDING M.D: Yes; hemoglobin 57%, erythrocytes 2,700,000.

VISITING M.D: Before you continue with the laboratory reports, I would like to examine the man.

ATTENDING M.D: Certainly; here is his room. *(They enter patient's room and the Visiting M.D. is introduced to the patient.)*

VISITING M.D: *(Starting examination)* The skin of the distal portions of the fingers is atrophic, the color normal; all peripheral pulsations are good; temperature, blood pressure, and pulse normal; heart and lungs clear. Neurologic examination is negative; funduscopic examination normal. I would like to observe the vessels of the chilled conjunctivae.

ATTENDING M.D: I will anesthetize the conjunctivae and get the slit-lamp corneal microscope. *(The conjunctivae are examined after direct application of distilled ice water, and the blood vessels are observed.)*

VISITING M.D: Notice how the blood stream is slowed and becomes fragmented and how small clumps of cells alternate with clear stretches of plasma. When warmed, the circulation becomes normal.

ATTENDING M.D: We performed the Rosenbach test. The right arm was immersed for fifteen minutes in water at 55° F. Blood samples were taken immediately afterward from both arms. The chilled hand showed ischemic changes, and there was no allergic reaction such as is seen with syphilitic paroxysmal cold hemoglobinuria. Blood serum from the chilled limb was cherry red, and from the other pink. Hemoglobinuria did not occur. Spectroscopic investigation of the chilled limb revealed oxyhemoglobin.

VISITING M.D: Exposure to cold not only causes intravascular hemagglutination but also, as a rule, hemolysis. I am surprised, because of this man's anemia, that the serum did not contain a large amount of free hemoglobin. These changes are purely local phenomena which the Rosenbach test demonstrates. Hemoglobinemia in the chilled limb is a constant feature in these cases. Hemolytic anemia is frequent.

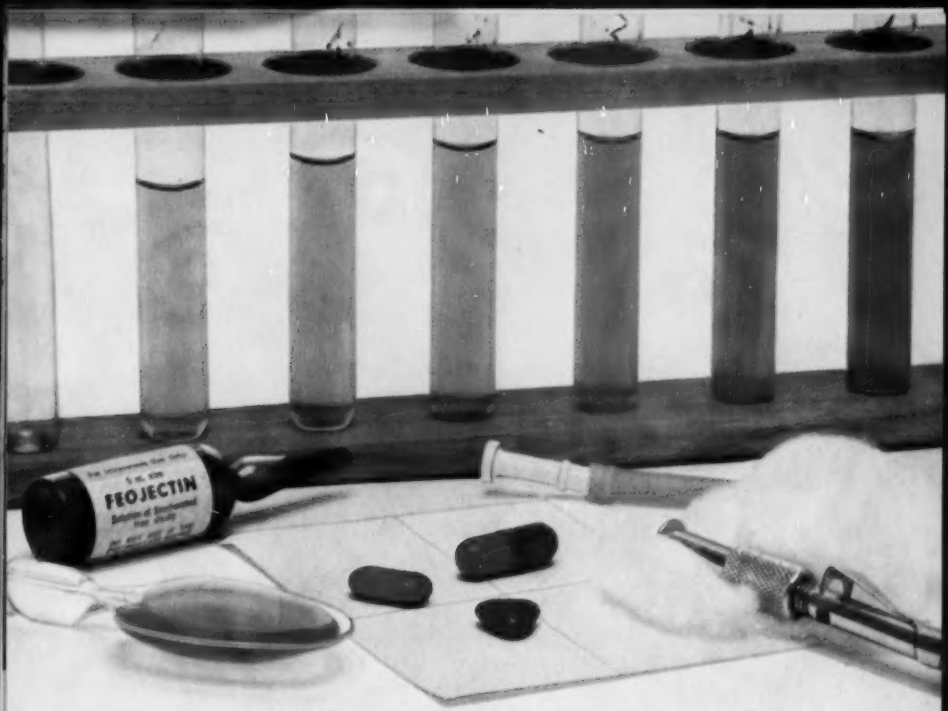
ATTENDING M.D: Perhaps we should have more laboratory data to validate our opinion. It seems unlikely that it is wrong, but . . .

PART III

ATTENDING M.D: Leukocytes 7,000 with normal differential count; reticulocytes 3%; and erythrocyte sedimentation rate 45 mm. in one hour.

VISITING M.D: The Coombs test?

ATTENDING M.D: Positive. Serum bilirubin 2 mg. per 100 cc.; serum albumin 4 gm. and globulin



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'Feosol Hematonic'—the new, high-potency hematinic containing B_{12}, gastric substance, folic acid, ascorbic acid and ferrous sulfate.

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The aged, the convalescent,
the constitutionally delicate,
the neurasthenic,
the chronically fatigued
and the anorectic . . .

These are the patients—neither seriously ill, nor yet entirely well—who often respond dramatically to the administration of one of these outstanding tonics.

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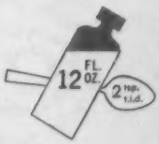

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3 gm.; alkaline phosphatase 10 King-Armstrong units. Numerous tests for renal insufficiency are negative. All the serologic tests have negative reactions. An agglutinin active in high titer was found in the serum, the titer was relatively fixed at 1 to 20,000 on several occasions. It was most active at 50° F. and inactive above 70° F. Results of the Donath-Landsteiner test were negative.

VISITING M.D: The sudden appearance of numbness and cyanosis of the hands when exposed to cold . . .

PART IV

VISITING M.D: *(Continuing)* makes us consider the diagnosis of high-titer cold hemagglutination. Occasionally normal sera contain an antibody which agglutinates red cells in the cold but this is present only in low titers and is of importance only in blood transfusion work; sometimes high titers of cold agglutinins occur in virus pneumonia or other diseases, or even without any other illness.

ATTENDING M.D: Can this have serious consequences?

VISITING M.D: Oh, yes—gangrene, severe intravascular hemolysis, and anemia. Sometimes amputation is necessary. Treatment for the condition is unsatisfactory. Many measures have been tried, but the only effective one I know is to avoid the cold and keep the extremities warmly covered. I think our executive should stay in Arizona. He will probably be relieved to know that the illness can be thus controlled and, if so, that it is not serious.

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3:15—Disintegration Test begins in actual stomach fluids (pH 2.7). Beaker at left contains ordinary enteric-coated erythromycin. At right is new *Film Sealed* ERYTHROCIN Stearate (Erythromycin Stearate, Abbott).

Earlier Blood Levels *from*

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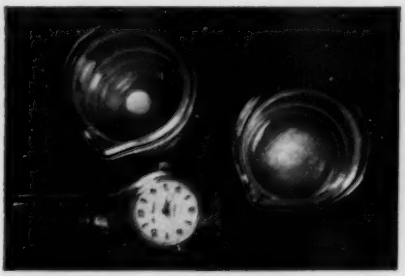
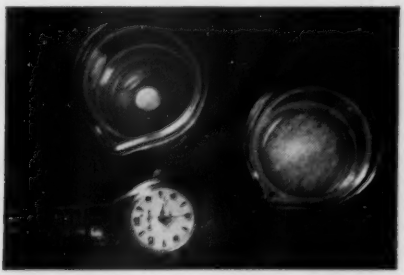
- HIGH BLOOD CONCENTRATIONS WITHIN 2 HOURS



3:20—Five minutes later, *Film Sealed* coating has already started to disintegrate. The tissue-thin film actually begins to dissolve within 30 seconds after your patient swallows tablet.



3:30—*Film Sealing* is now completely dissolved. At this stage, ERYTHROCIN is ready to be absorbed, and ready to destroy sensitive cocci—even those resistant to most other antibiotics.

3:45—Now the *Film Sealed* tablet mushrooms out with all of the drug available for absorption. Note that enteric-coated tablet is still intact. Tests show that the new Stearate form definitely protects ERYTHROCIN.

4:00—Because of *Film Sealing* (marketed only by Abbott) the drug is released faster, absorbed sooner. In the body, effective ERYTHROCIN blood levels appear *in less than 2 hours* (instead of 4-6 as before). Abbott

*pat. applied for

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Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Elective Induction of Labor*

QUESTION: Under what circumstances should labor be induced by rupture of membranes?

Comment invited from

SILAS H. STARR, M.D.
LOUIS F. MIDDLEBROOK, M.D.
JOHN EARL GARRISON, M.D.
PAUL A. RABER, M.D.

► TO THE EDITORS: Two and one-half years ago, Dr. Edwin P. Solomon and I expressed views regarding the elective induction of labor practically identical to those of Drs. W. C. Winn, H. H. Ware, Jr., and E. E. Schelin. At that time, we presented 100 consecutive cases of elective induction of labor. Since then, we have collected 200 more cases. The reason for our rather small number is that our conditions are quite strict. Our conclusions are the same as they were when printed in our paper (*South. M. J.* 45:337-342, 1952).

Elective induction of labor should be carried out when: [1] presentation is vertex, [2] the presenting part is at the level of the spines, and [3] the cervix is ripe—effaced and 2 cm. or more dilated. We are more strict with primiparous than multiparous patients. If the baby appears unusually small or if there is a question that the patient is not in her last ten days of pregnancy, we do not consider her suitable for induction.

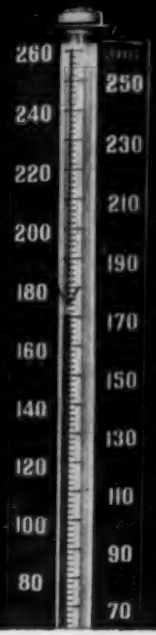
Vaginal examination is done in the office and only suitable patients are sent to the hospital. Rupturing the membranes is done in the hospital and if labor does not begin within the next hour or two, fractional doses of Pitocin, 1 minim at each dose, may be given. The latent period from induction to the onset of labor in our patients varied from five minutes to four hours. The average latent period was forty-four minutes. The average length of labor was three hours and twenty-four minutes. The shortest labor was forty minutes; the longest was twelve hours.

In no case of elective induction of labor have we used an intravenous Pitocin drip. This, in our minds, is an ordeal for the patient and is entirely unnecessary. In certain cases in which induction is not elective and all conditions are not ideal, the intravenous drip has been used to good advantage. In our series of cases, there has been no fetal or maternal mortality.

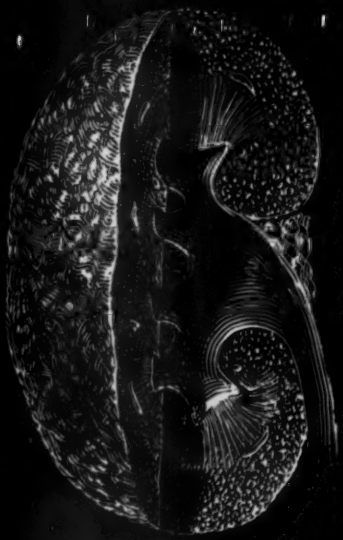
Our conclusions are that elective

(Continued on page 170)

*MODERN MEDICINE, Mar. 1, 1953, p. 105.



Clinical results of treatment with the most effective single hypotensive available . . .



Improvement in 55 to 62% of patients with hypertensive kidney disease[1]

Together with significant reductions in elevated blood pressure in 80 per cent of hypertensives,[1,2] Methium therapy may produce an appreciable improvement in the associated renal symptoms when actual uremia is not present. Albuminuria and hematuria present in 48 of the 120 hexamethonium-treated patients followed by Moyer's group, improved definitely in 28 cases.[1] In addition, progressive renal failure did not continue so long as the blood pressure was controlled.

With continued management, up to or beyond a year, blood pressure may be reduced and stabilized, and cardinal symptoms arrested or reversed, without any increase in dosage.[1]

As blood pressure is reduced, and even without reduction, hypertension symptoms have regressed. Retinopathy may disappear, headache, cardiac failure and kidney function may improve.

Methium, a potent autonomic ganglionic blocking agent, reduces blood pressure by interrupting nerve impulses responsible for vasoconstriction. Because of its potency, careful use is required. Pretreatment patient-evaluation should be thorough. Special care is needed in impaired renal function, coronary disease and existing or threatened cerebral vascular accidents.

1. Moyer, J. H., et al.: J.A.M.A. *152*:1121 (July 18) 1953. 2. Moyer, J. H., et al.: Am. J. M. Sc. *225*:379 (April) 1953.

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NOW, FOR THE FIRST TIME, one of the safest and most reliable sedative-hypnotics is available for routine prescription use in a stable, convenient formulation: CLORTRAN capsules chlorobutanol (Wampole).

Beckman[1] remarks, "I think the profession would do well to use this drug more often in insomnia."

PREFERABLE TO THE BARBITURATES because it is not habit-forming and produces refreshing, "normal" sleep from which the patient can be easily and completely roused, CLORTRAN is also *superior to chloral hydrate*, since CLORTRAN does not upset the stomach.[2]

CLORTRAN actually exerts a mildly carminative, soothing, spasmolytic influence on the gastric mucosa and muscularis.[3] Thus, CLORTRAN is specifically and directly beneficial in control of sea-, air-, and car-sickness, nausea and gastritis. Here at last, is a safe, well-tolerated, oral sedative-hypnotic (and antinauseant) that works uniformly well, without "hangover," gastric irritation, or habit-formation.

Dosage: SEDATIVE-ANTISPASMODIC, 0.25 Gm. 2 to 4 times daily.

NAUSEA or MOTION SICKNESS: 0.25 Gm., repeated in 30 minutes if necessary. *Hypnosis:* 0.5-1.0 Gm., ½ to 1 hour before retiring. *Contraindicated* only in severe cardiac, hepatic or renal disease.

CLORTRAN is supplied in golden-orange, soft gelatin capsules, 0.25 Gm. (3¾ Gr.) and 0.5 Gm., STABLE CHLOROBUTANOL (7½ Gr.); bottles of 100.

1. Beckman, H.: *Treatment in General Practice* (Saunders) 1948. 2. Rehfuss, M. E., Albrecht, F. K., and Price, A. H.: *Practical Therapeutics* (Williams & Wilkins) 1948. 3. Krantz, J. C., & Carr, C. J.: *The Pharmacologic Principles of Medical Practice* (Williams & Wilkins) 1951.

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Sedative-Hypnotic-Antinauseant : Capsules Stable Chlorobutanol (Wampole)

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induction of labor is recommended when the conditions for induction are present in patients at or near term for whom a short labor is anticipated. The condition of the cervix and lower segment is the most important factor when considering induction. Vaginal examination is essential for the proper evaluation of the patient and does not increase morbidity.

SILAS H. STARR, M.D.
Louisville

► TO THE EDITORS: A history of rapid labor in a multiparous patient living far from the hospital may indicate induction at or near term. Estimated due dates are notoriously inaccurate, and selection of a date should be more on the basis of the baby's maturity and the condition of the cervix. The pelvis should be adequate, presentation vertex, cervix soft and more than half effaced, and at least 2 cm. dilated. When these conditions are met the vertex will either be engaged or will readily engage as labor is induced. Small doses of Pitocin, with the obstetrician present, will help determine the "ripeness" of a case. An inducible uterus should be irritable and readily stimulated by Pitocin, and, if other conditions are met, amniotomy may be performed.

Some mild cases of preeclampsia, recognized early through careful

(Continued on page 174)

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For Urology work, perineal cut-out removed, pan extended.

Patient supported comfortably on table for examination of varicose veins.

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Dose: 0.6 cc. daily.

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prenatal observation, may be reversible. When conservative management fails, termination by induction may be advisable. Preparatory courses of Pitocin, starting with ½ or 1 minim increasing every one-half hour to 2 or 3 minims, or intravenous Pitocin infusion, with rests between courses, may soften the cervix and prepare the patient for amniotomy.

Rupture of the membranes at or near term in a multigravida with proved marginal placenta previa will often allow a vertex to serve as a tamponade, control bleeding, and bring on labor and delivery.

Reciprocal arrangements between obstetricians for vacation or night coverage with full knowledge and consent of the patient are to be preferred to so-called "babies by appointment." In spite of extreme care, the best planning of dates for these cases is bound to result in a certain number of unnecessarily premature babies, some of whom are lost, and an occasional prolapsed cord.

LOUIS F. MIDDLEBROOK, M.D.
Hartford, Conn.

► TO THE EDITORS: Generally speaking, before induction of labor by rupture of membranes, a cervix should be anterior and dilated 2 to 4 cm. and should not be long and tight; the head should present and

(Continued on page 178)

THE VALUE OF CARBONATION IN BOTTLED SOFT DRINKS

The outstanding vital characteristic of an effervescent soft drink is its carbonation. To its CO_2 content, in particular, is due its important physiologic value.

McClellan,[1] discussing the role of CO_2, stated that many studies have emphasized its great importance in the body, where it occurs more particularly as carbonic acid in blood and tissue fluids. In this form, it is recognized to be largely responsible for the regulation of breathing and plays an important part in the chemical regulation of the body's acid-base balance. Approximately 10 per cent of the carbon used in building chemical substances in the cell may come from the CO_2 molecule.

1. McClellan, W. S., The Importance of Carbon Dioxide in the Human Body (unpublished paper)

CO_2 HAS MULTIPLE ACTION!

In a soft drink, CO_2 helps stimulate the taste buds and nerve endings in the tongue and mucous membranes of the mouth. Psychically it helps to stimulate appetite and set up a chain of nerve reflexes favorable to digestion. As released in the stomach CO_2 appears to increase the blood flow in the stomach wall and some of it would seem to be absorbed through the capillaries which it dilates. The action of CO_2 aids in hastening the emptying time of the stomach, as well as alleviating heartburn and some types of nausea. When swallowed in a beverage, if in excess of the body's needs, CO_2 normally passes off harmlessly through the lungs.

Thus a flavored carbonated beverage, in addition to being a pleasant, zestful, refreshing drink, has a specific value in the dietary for its CO_2 content alone.

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Thiamine mononitrate (B_1)	10.0	mg.	Copper–from copper sulfate	1.0	mg.
Riboflavin (B_2)	5.0	mg.	Fluorine–from calcium fluoride	0.025	mg.
Pyridoxine HCl (B_6)	1.0	mg.	Iron–from 4 gr. ferrous sulfate exsic.	76.2	mg.
Panthenol, equivalent to of calcium pantothenate	10.0	mg.	Calcium–from dicalcium phosphate	165.0	mg.
			Manganese–from manganous sulfate	1.0	mg.
Vitamin B_{12} U.S.P. (crystalline)	2.0	mcg.	Iodine–from potassium iodide	0.15	mg.
Folic acid U.S.P.	2.0	mg.	Molybdenum–from sodium molybdate	0.2	mg.
Nicotinamide	100.0	mg.	Potassium–from potassium sulfate	5.0	mg.
Vitamin E (as mixed tocopherols natural)	10.0	mg.	Zinc–from zinc sulfate	1.2	mg.
Inositol	30.0	mg.	Magnesium–from magnesium sulfate	6.0	mg.
Choline–from choline bitartrate	30.0	mg.	Phosphorus–from dicalcium phosphate	127.4	mg.

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not be high or floating. Induced labors should not be routine; disproportion should not exist between pelvis and fetal head; cord prolapse should be watched for. There is little risk of infection, morbidity, or mortality.

These comments are based entirely on a personal delivery of 7,088 cases, plus the observation of approximately 2,000 other cases in American and European hospitals.

The cervix must be sufficiently dilated to allow the head to come through without too much trauma. If there is a minor cephalopelvic disproportion, labor may be induced by rupture of the membranes in selected cases several days ahead of term, instead of waiting until term and doing a cesarean.

Labors may be artificially induced at or near term if the possibility of convulsions or of shock threatens mother or baby.

Fetal death at or near term may be sufficient cause for premature delivery. Many mothers will become panicky when aware of carrying a dead baby. At other times, labor fails to start at term, perhaps because of tough membranes. Such cases may be helped by amniotomy.

JOHN EARL GARRISON, M.D.
Birmingham

► TO THE EDITORS: It is essentially true that the judicious use of amniotomy for elective induction of labor by a properly trained physician is a safe and effective procedure. However, as stated by Drs. Winn, Ware, and Schelin, certain prerequisites are extremely important:

1] The cervix should be effaced and dilated 2 cm.

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Raudixin, most prescribed of the rauwolfia preparations, contains *all the alkaloids of rauwolfia.* It is the powdered whole root. In almost all cases of hypertension, *prescribe Raudixin first.* Later, add more potent agents if necessary. Dosage: 200 mg. daily, adjusted according to response. 50 and 100 mg. tablets, bottles of 100 and 1000.

base-line therapy...

Raudixin in hypertension

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For that patient not doing as well as you'd like on ammonium chloride, xanthines, aminophylline, resins and other less effective diuretics

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2] There should be no cephalopelvic disproportion.

3] The vertex should present and be well into the pelvis.

4] Pregnancy should be at or near term.

Indications should be evaluated very closely. I do not believe that judicious use will allow many primiparas to be included in the group which are induced electively because of fear of precipitation. Actually, the indications should justify the premise that elective induction will decrease the fetal or maternal morbidity rate.

There are two reasons or lines of thought which make me feel that elective inductions should be done sparingly and cautiously. The first concerns the occasional induced patient with a "ripe" cervix who does not go into labor in spite of the ruptured membrane. Even the most experienced obstetricians can occasionally misjudge the physical status and readiness of the patient to go into labor. Also, there is the occasional "exception" which proves the rule. In either instance we resort to Pitocin and possibly antibiotics with their potentialities for occasionally causing untoward reactions.

As the authors state, when the requirements relative to the physical condition of the patient for induction are not fulfilled, the mother and baby are endangered as in any other technic that is abused or thoughtlessly used. The authors should be complimented on their judgment in the selection of cases, since apparently all of their 278 cases went into labor within seven hours.

Another thing to be considered is the vulnerable position in which

January 30, 1952—
typical adolescent acne

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EXTENDS THE "THERAPEUTIC POTENTIAL" IN ACNE[1]

Cumulative experience with **KUTAPRESSIN** has confirmed the remarkable value of this new agent in acne.[1-4] Recently, significant improvement was obtained in 63 percent of 52 patients who had ceased to improve on other methods of treatment, including x-ray.[1] Definite improvement in 1 to 2 months plus the relative painlessness of the treatment ensured patient-cooperation. **KUTAPRESSIN** has also proved effective against rosacea, pruritus ani, hypertrophic scars, and keloids.[5-7]

Unique action—varied applications...

KUTAPRESSIN is a highly selective vasoconstricting principle acting on abnormally dilated terminal arterioles and capillaries without raising systemic blood pressure. Free from side-effects, it has been used with encouraging results in such diverse applications as herpes zoster, drug dermatoses, eczemas, third-degree burns and graft preparations, and in reducing postoperative bleeding following tonsillectomies, adenoidectomies, etc. There are no known contraindications.

DOSAGE: Average, 2 cc. intramuscularly or subcutaneously, daily or thrice weekly until improvement is obtained. In severe cases, 5 cc. may be administered initially, and subsequently reduced.

SUPPLIED: As aqueous solution in 10- and 20-cc. multiple-dose vials.

1. Pensky, N., and Goldberg, N.: New York State J. Med. 53:2238, 1953. 2. Nierman, M. M.: J. Indiana M. A. 45:497, 1952. 3. Knox, J. M.: Preliminary Report, U. S. Navy Medical News Letter, vol. 20, Nov. 14, 1952. 4. Lubowe, I. L.: Clin. Med. 59:354, 1952. 5. Poole, W. L.: To be published. 6. Kolb, C.: To be published. 7. Marshall, W.: M. Times 79:222, 1951.

*Case report.

Two months later: "the skin was dry . . . the whole face markedly improved"*

Professional Literature Available

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the obstetrician places himself for criticism. Any time a doctor does an elective procedure such as this for a normal pregnant patient at term, he is putting himself in a perfect position for criticism. His indications for this elective procedure must warrant the possibility of severe censure. Unavoidable intrapartum and neonatal deaths are possible during these induced labors as well as during or after spontaneous labors, and it is too easy for patients to blame the result on the induction regardless of the true cause. In the smaller communities, such criticism spreads fast and easily. I think the authors were indeed fortunate percentagewise in this respect, since there was no fetal morbidity or mortality in their series.

Elective induction for previous precipitates, or patients some distance from the hospital, is a much more justifiable indication in cities the size of Chicago than in those that are the size of Decatur. When almost all the patients are within twenty minutes of the hospital, and the doctors are within ten minutes, there seem to be few cases in which elective inductions are really indicated. To be done merely for the convenience of the doctor or patient shows poor judgment and little conscience. Some doctors, in reading my comments, might feel that I am reaching for possible complications, but do not forget that this is a purely elective procedure in which a satisfactory outcome should be realized in 100% of the cases.

I am but cautioning against lax indications for amniotomy when there may be so little to gain and possibly much to be lost.

PAUL A. RABER, M.D.
Decatur, Ill.

CALPURATE the chemical compound theobromine calcium gluconate, provides uninterrupted cardiac therapy, affording lasting peace and comfort.

CALPURATE is recommended by outstanding clinicians [1,2,3] as safe prophylaxis in the management of angina pectoris.

The anginal syndrome of STRESS in the hypertensive . . .

available as, **CALPURATE** with Phenobarbital 16 mg. (¼ gr.) phenobarbital per tablet

CALPURATE tablets of 500 mg. (7½ gr.)

1. Hejmancik, W., Current Therapy, p. 121, 1953. Edited by H. F. Conn, M.D.
2. Stroud, W. D., IBID, p. 123.
3. Beckwith, J. R., Coronary Artery Disease, West Virginia Med. J., Nov. 1952, p. 313.

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short REPORTS

Virology

Hepatitis in Raccoons

An etiologic viral agent causing fatal bilirubinemia, jaundice, and conjunctivitis in raccoons has been isolated from liver suspensions of a sick raccoon trapped in Maryland. The filterable agent is capable of inducing the disease when injected into raccoons and ferrets but is ineffective when administered to mice, hamsters, rats, rabbits, guinea pigs, dogs, monkeys, pigs, or embryonated eggs. The agent appears to be unrelated to the viruses of feline or canine distemper and canine hepatitis, report Lawrence Kilham and Carlton M. Herman of the National Institutes of Health, Bethesda, and the Patuxent Research Refuge, Laurel, Md. Preparations of the infectious material are resistant to repeated freezing and thawing procedures, indicative of the viral nature of the agent.

Proc. Soc. Exper. Biol. & Med. 85:272-275, 1954.

Pathology

Scar Tissue Differentiation

Regenerated epithelium in rabbits is capable of redifferentiating into hair follicles and sebaceous glands. Extirpation of disks of skin 25 mm. in diameter from the backs of rabbits did not prevent growth of functioning glands and hair follicles in most of the resultant scars. Dr. Charles Breedis of the University of Pennsylvania, Philadelphia, reports that the differentiated structures arise by budding from radially arranged bars of thickened epithelium. Migration of follicular and glandular cells from the viable edge of skin is possible only if the wound is prevented from contracting or drying.

Proc. Am. A. Cancer Research 1:7, 1954.

Cortisone

Delayed Cortisone Reduction

Inactivation of the cortisone molecule by liver tissue is prevented in vitro by the addition of para-aminobenzoic acid. Slices of rat liver metabolized 86.9% of the available cortisone after three hours of incubation. Addition of 5 to 50 mg. of sodium para-aminobenzoate resulted in reduction of only 22.7% of the hormone. Similar results were observed with surviving human liver tissue. Para-aminobenzoic acid appears to interfere with the rapid reduction of the unsaturated conjugated system of the cortisone molecule while permitting a more rapid degradation of the side chain, reports Dr. Leon L. Wiesel of Brooklyn Hospital. The in vitro evidence supports and explains the synergistic action of para-aminobenzoic acid and cortisone in therapy for rheumatoid arthritis.

Am. J. M. Sc. 227:80-82, 1954.

BRONCHIAL ASTHMA

dramatic relief even in the "refractory" patient

Even asthmatics who have proved refractory to all customary measures including epinephrine (and even to other forms of ACTH) may benefit dramatically from HP*ACTHAR Gel.

Fast relief in severe attacks of bronchial asthma can be confidently expected with HP*ACTHAR Gel, given either subcutaneously or intramuscularly. HP*ACTHAR Gel may also provide long-lasting remissions.

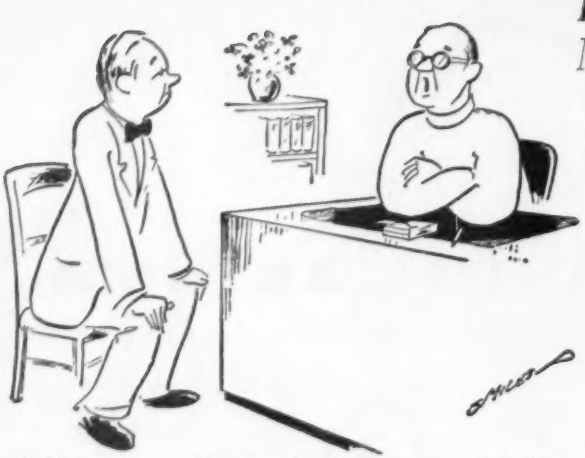
When used early enough, HP*ACTHAR Gel may become a valuable agent in prolonging the life span of the asthmatic. The authoritative Journal of Allergy stresses: ACTH "should not be withheld until the situation is hopeless."[1]

1. Editorial, J. Allergy 23: 270, 1952.

HP*ACTHAR Gel
(IN GELATIN)

*Highly Purified. HP*ACTHAR* Gel is The Armour Laboratories Brand of Purified Adrenocorticotropic Hormone—Corticotropin (ACTH).

THE ARMOUR LABORATORIES
A DIVISION OF ARMOUR AND COMPANY · CHICAGO 11, ILLINOIS



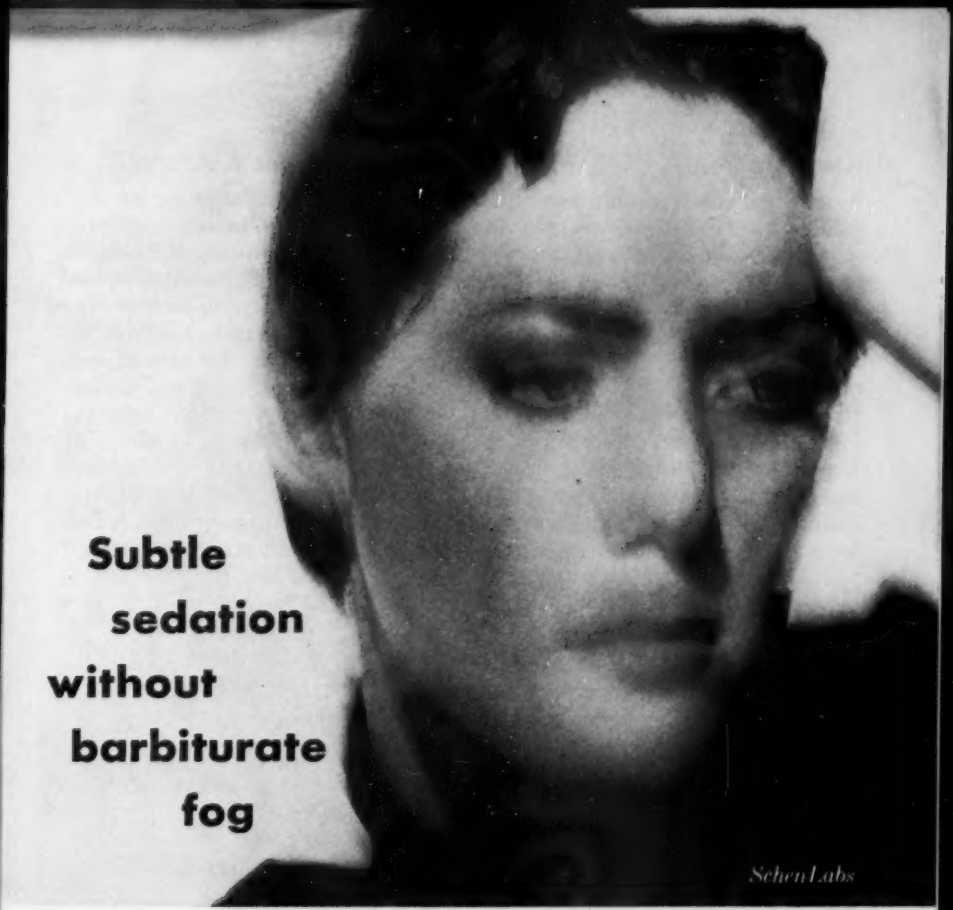
"After two weeks you should have guessed that 'Void after thirty days' on your health certificate did not refer to bladder function."

Life's Weary Moments

Think of a gag that fits the illustration. For every issue a new gag is published and the author sent $5. The June 1 winner is

E. J. Van Scott, M.D.
Rockville, Md.

Mail your caption to The Cartoon Editor Caption Contest No. 1 MODERN MEDICINE 84 South 10th St. Minneapolis 3, Minn.



Sedamyl® gently relieves anxiety and tension generated by social pressure and personal tragedy. Why? Sedamyl is an "unsually safe and practical"[1] non-barbiturate sedative. Patients on Sedamyl stay alert, stay out of the barbiturate fog, avoid the groping travel between hypnosis and hangover. In fact, 9 out of 10 may get smooth yet decisive relief from anxiety and tension[1]... and never experience lethargy or letdown during or after Sedamyl sedation.

sedate with SEDAMYL®

(ACETYLBROMDIETHYLACETYLCARBAMID, SCHENLEY)

relax anxiety, transform tension into a smile

Each Sedamyl tablet provides 0.26 Gm. (4 gr.) acetylbromdiethylacetylcarbamid, Schenley.

1. Tebrock, H. E.: M. Times 79:760, 1951.

Schenley Laboratories, Inc., *New York 1, New York*

Public Health

Rabies in Bats

A reservoir for sporadic rabies in wildlife and the additional risk of occasional human infection may be furnished by bats. Rabies in a bat captured after an attack upon a woman is described by Dr. Ernest J. Witte of the Pennsylvania Department of Health, Harrisburg. Examination of the hoary bat, *Lasiurus cinereus*, showed typical Negri bodies. Intracranial rabbit inoculations of the infected brain material resulted in rabies symptoms and death. The bitten woman was given antirabies prophylaxis immediately and suffered no adverse effects.

Am. J. Pub. Health 44:186-187, 1954.

Orthopedics

Plastic Casts for Fractures

A plaster-of-paris bandage impregnated with melamine resin provides a waterproof, porous, lightweight plaster cast for immobilization of fractures. Only wetting the bandage with water is necessary before direct application to the patient, and the resulting cast is 4 times stronger than previous plaster shells, reports Dr. Milton C. Cobey of Georgetown University, Washington, D. C. The cast is cool and comfortable, permits bathing, is easily removed with scissors, and need not be removed for roentgenographic studies of the healing process.

Geriatrics 9:172-173, 1954.

Clinical Control of Conception . . .

In a study comparing the effectiveness of all available contraceptive jellies, LANTEEN jelly destroyed a specified amount of sperm within five minutes—far less time than officially required for an effective spermatocide.* The use of LANTEEN products in the favored method of *combined physical and chemical barriers* affords maximum protection, practicality, and minimal psychologic offense.

*Spermicidal times of contraceptive jellies and creams secured in 1951 by the method of Brown & Gamble. *J.A.M.A.* 152: 1037-1041, July 11, 1953.

Curiosa of Conception
. . . one of a series

WOODCUT BY ANTONIO FRASCONI

Amniotic Headgear

In the middle ages much superstition was attached to the caul, a piece of the amnion which sometimes covers the newborn's head. The caul was variously held to bring its owner good necromantic powers, eloquence, protection against drowning, and bad luck.

optimal method:
physical barrier *plus* chemical barrier

formula:

Ricinoleic Acid	0.50%
Hexylresorcinol	0.10%
Chlorothymol	0.0077%
Sodium Benzoate and Glycerin in a Tragacanth Base.	

optimal means:
flat spring diaphragm
jelly

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Manufactured by ESTA MEDICAL LABORATORIES, INC., CHICAGO 38, ILLINOIS

Neurology

Relief in Parkinsonism

Intracerebral injection of procaine into the area of the globus pallidus affords temporary cessation of hyperkinetic disorders in some advanced cases of Parkinson's disease. Patients relieved by the injections are considered to be suitable candidates for the more radical and hazardous procedure of surgical occlusion of the anterior choroidal artery, explains Dr. Irving S. Cooper of New York University, New York City. The technic involves making a small trephine opening in the skull 1.5 cm. behind the level of the tragus and 1 cm. above the uppermost level of the helix of the ear. A small-caliber ventricular needle is inserted through an opening in the dura and introduced horizontally into the brain to a depth of 4.5 to 5 cm. beyond the dura. The needle then lies between the intermediate and medial segments of the globus pallidus, and 5 minims of 0.5% procaine is injected. In 8 of 10 patients so treated, tremor and rigidity were eliminated or alleviated within two to five minutes and were controlled up to forty-eight hours. Surgical occlusion of the anterior choroidal artery for patients benefited by the procaine injections may be expected to produce more permanent cessation of the hyperkinetic disturbances.

Science 119:417-418, 1954.

Pathology

Placental Transmission

Passage of the lupus erythematosus (LE) factor across the placental barrier is indicated by the demonstration of the LE phenomenon in the newborn infant of a mother with disseminated lupus erythematosus. The LE factor probably existed in the maternal circulation as simple gamma globulin not combined with any large-sized molecule, suggest Drs. Robert G. Bridge and Francis E. Foley of the Rochester General Hospital, Rochester, N.Y. The finding was demonstrable in the infant up to seven weeks after delivery but was definitely absent at 4 months of age. No antibodies against the factor were detected in the infant's serum by precipitation or neutralization tests. The LE phenomenon does not indicate that the infant has or will have disseminated lupus erythematosus or that placental transference produces the disease in the newborn.

Am. J. M. Sc. 227:1-8, 1954.

Books Received

MAYO CLINIC DIET MANUAL by Committee on Dietetics of the Mayo Clinic, 2d edition, 247 pp. W. B. Saunders Co., Philadelphia, 1954. $5.50

PEDIATRIC CLINICS OF NORTH AMERICA. A SYMPOSIUM ON CLINICAL ADVANCES. 512 pp. W. B. Saunders Co., Philadelphia, 1954.

THE SCIENCE BOOK OF WONDER DRUGS by Donald G. Cooley, 247 pp., ill. Franklin Watts, Inc., New York City, 1954. $2.95

Doctor to Doctor

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The June 1 winner is

S. P. Dimitroff, M.D.
Hollywood, Calif.

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MODERN MEDICINE
84 South 10th St.
Minneapolis 3, Minn.

"That banker wasn't satisfied with his ECG until I explained that his ticker tape showed unsteady fluctuations."

Therapy

Ulcerative Colitis

Symptomatic and proctologic improvement occurs in patients with chronic nonspecific ulcerative colitis after administration of aureomycin residue. Dr. Mark M. Marks of the Menorah Medical Center, Kansas City, Mo., administered 4 tablets daily before meals and at bedtime to 10 patients with the disease. Most patients improved rapidly and had normal bowel movements, weight gain, and hemoglobin rise. Friability of the colonic mucosa decreased as hypermotility of the intestinal tract lessened. Except for infrequent slight symptoms, all but 1 patient have remained in remission six months to two years, despite seasonal changes, respiratory infections, and emotional disturbances. The tablets of 0.5 gm. are prepared by granulation and compression of the dried and pulverized sludge remaining after aureomycin is removed from aqueous solution. Each pill contains 19.8 mg. of antibiotic and 19.8 μg. of vitamin B_{12} in addition to small amounts of fat, vegetable fiber, and diatomaceous earth.

Missouri Med. 51:189-190, 1954.

to support the healthy...

Viterra®

a vitamin-mineral formulation of 21 balanced factors, supplementing the depleted diet

each capsule of *Viterra* contains:

Vitamin A	5,000 U.S.P. Units
Vitamin D	500 U.S.P. Units
Vitamin B_{12}	1 mcg.
Thiamine Hydrochloride	3 mg.
Riboflavin	3 mg.
Pyridoxine Hydrochloride	0.5 mg.
Niacinamide	25 mg.
Ascorbic Acid	50 mg.
Calcium Pantothenate	5 mg.
Mixed Tocopherols *(Type IV)*	5 mg.
Calcium	213 mg.
Cobalt	0.1 mg.
Copper	1 mg.
Iodine	0.15 mg.
Iron	10 mg.
Manganese	1 mg.
Magnesium	6 mg.
Molybdenum	0.2 mg.
Phosphorus	165 mg.
Potassium	5 mg.
Zinc	1.2 mg.

to fortify the sick...

Viterra® Therapeutic

high-potency capsules specifically designed to meet increased nutritional needs during illness

each capsule of

Viterra Therapeutic

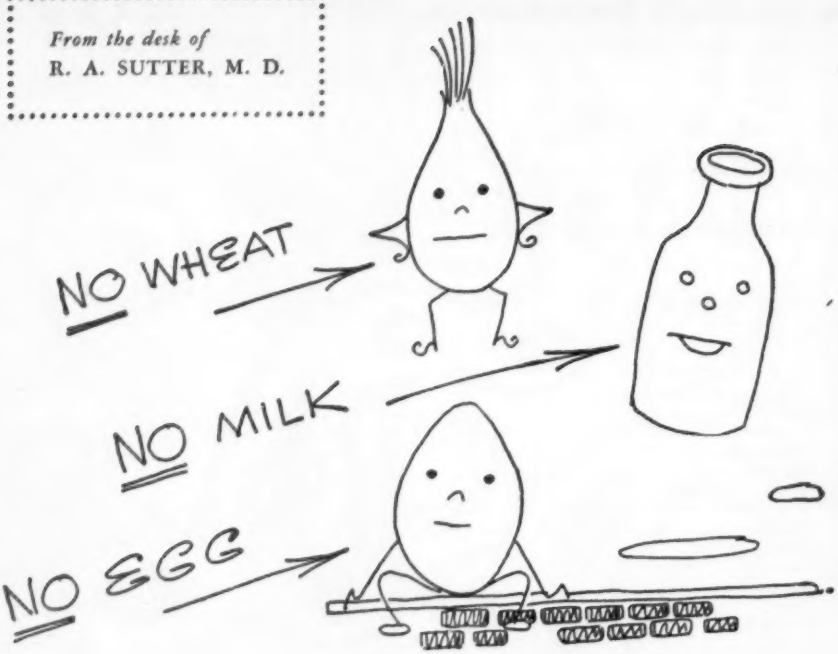
contains:

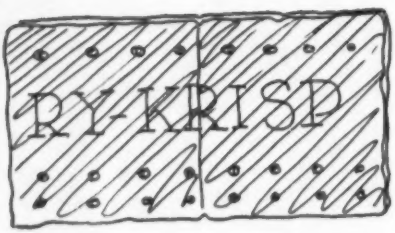
Vitamin A	25,000 U.S.P. Units
Vitamin D	1,000 U.S.P. Units
Thiamine Mononitrate	10 mg.
Riboflavin	5 mg.
Vitamin B_{12}	5 mcg.
Niacinamide	100 mg.
Ascorbic Acid	150 mg.
Calcium	103 mg.
Cobalt	0.1 mg.
Copper	1 mg.
Iodine	0.15 mg.
Iron	10 mg.
Magnesium	6 mg.
Manganese	1 mg.
Molybdenum	0.2 mg.
Phosphorus	80 mg.
Potassium	5 mg.
Zinc	1.2 mg.

Rexic Rx

536 Lake Shore Drive, Chicago 11, Illinois

From the desk of
R. A. SUTTER, M. D.





RY-KRISP
THE bread in
allergy diets!

Just whole-grain rye, salt & water

There is only
one RY-KRISP!

Cancer

Prostate Gland Secretion

The fraction of serum acid phosphatase which is inhibited by l-tartrate appears to be the major component of serum acid phosphatase in cases of prostatic cancer. Elevation of the prostatic acid phosphatase fraction may occur even with normal serum acid phosphatase levels. Dr. William H. Fishman and associates of Tufts College, Boston, suggest that the l-tartrate–inhibited fraction originates from the prostate gland, since digital massage of the gland often produces abnormal elevation of the prostatic compound. Administration of testosterone propionate also appears to raise the prostatic fraction.

Proc. Am. A. Cancer Research 1:14, 1954.

Pathology

Diabetogenic Agents

Compounds capable of damaging pancreatic islet cells appear to have binding properties with metal ions. Of 13 quinoline derivatives structurally related to the diabetogenic agent, 8-hydroxyquinoline, only 2 were capable of islet cell destruction. The diabetogenic action of 8-hydroxyquinaldine and of 5-amino-8-hydroxyquinoline correlates with the fact that the compounds have properties of organic reagents able to react selectively with the metal ions, report Drs. Ichiro Kadota and Tokuyoshi Abe of Kyoto University, Kyoto, Japan. A hydroxy group in position 8 of quinoline is essential for the cytotoxic action, whereas the addition of an extra hydroxy or carboxyl group abolishes the specific diabetogenic effect.

J. Lab. & Clin. Med. 43:375-385, 1954.

LATE REPORTS *from Medical Centers*

★ YALE UNIVERSITY, New Haven, Conn.—A weakened, live poliomyelitis virus safely immunizes monkeys against paralytic strains. Harmless mutations of all 3 virus types were obtained by passing organisms through testicular and kidney cultures free of nerve cells, reports Dr. Joseph L. Melnick. A strain that will remain innocuous after many cycles of reproduction is being sought.

★ UNIVERSITY OF CINCINNATI—Vitamin B_6 in doses of 50 to 300 mg. daily will prevent toxic symptoms during intensive isoniazid treatment for tuberculosis, reports Dr. Richard W. Vilter. Vitamin B_6 deficiency is likely when diet is restricted to specially processed foods. Convulsions of infants fed a commercial milk formula lacking the vitamin were relieved by administration of B_6. Seborrheic dermatitis involving local vitamin deficiency was relieved by 1% pyridoxine ointment applied four or five times a day.

★ ARGONNE NATIONAL LABORATORY, Chicago—Protection from radiation may be secured if natural body protective factors can be isolated and reproduced. Blood plasma transfusion of mice before ordinarily lethal exposure prevents death, apparently through material in globulins, report Drs. Agnes N. Stroud and Austin M. Brues. Dr. Julius White and associates of the U. S. National Cancer Institute, Bethesda, Md., report that destruction of tissue protein after high roentgen dosage is retarded or prevented by posttreatment injection of bone marrow.

★ UNIVERSITY OF WESTERN ONTARIO, London—Sex may be determined by examination of skin cells, since nuclei of females usually contain chromatin, a component seldom found in male nuclei. From a study of 30 cases, Dr. Murray L. Barr concludes that true hermaphrodites may have either cellular pattern, but that type among male and female pseudohermaphrodites generally agrees with sex. However, 1 female had male nuclei.

★ MICHAEL REESE HOSPITAL, Chicago—Risk of cancer is increased by overeating, according to insurance statistics and recent animal experiments. Among mice given one-third the usual caloric intake, no tumors developed within two years after injection of carcinogens. Dr. Albert Tannenbaum noted much longer life than among well-fed animals with tumor, and weight loss was actually less.

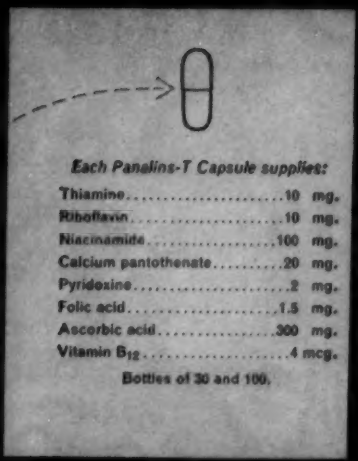
★ UNIVERSITY OF WISCONSIN, Madison—Shock from severe burns may be counteracted by piperazine. Up to 100% of affected rats recover after administration of one-half the lethal dose, though only 35 to 45% survive without the drug, declare Steven E. Jordan and associates. The drug also aids survival of dogs after major blood loss.

★ UNIVERSITY OF OREGON, Portland—Survival time of patients with chronic leukemia is nearly doubled by regular total body irradiation with small roentgen doses or injection of radioactive phosphorus. After initial weekly exposures, Dr. E. E. Osgood and associates find that patients maintain good health and activity about 85% of the time with therapy every four to twelve weeks. A total of 163 patients have been treated since 1941; of these, 48 were still alive at the end of 1953.

NEW NATIONAL RESEARCH COUNCIL STANDARDS*

for effective vitamin therapy

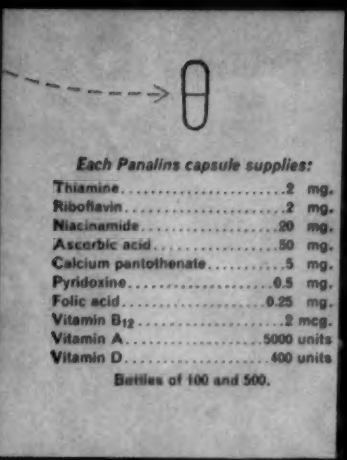
Emphasizing that regular vitamin intake is essential to productive health and that stresses such as disease and injury profoundly affect nutritional requirements, the Committee on Therapeutic Nutrition of the Food and Nutrition Board* recommends standard vitamin formulations for both maintenance and therapeutic dosage. In Panalins and Panalins-T, Mead Johnson & Company makes these authoritatively recommended formulations available to the medical profession.



Each Panalins-T Capsule supplies:

Thiamine	10 mg.
Riboflavin	10 mg.
Niacinamide	100 mg.
Calcium pantothenate	20 mg.
Pyridoxine	2 mg.
Folic acid	1.5 mg.
Ascorbic acid	300 mg.
Vitamin B_{12}	4 mcg.

Bottles of 30 and 100.



Each Panalins capsule supplies:

Thiamine	2 mg.
Riboflavin	2 mg.
Niacinamide	20 mg.
Ascorbic acid	50 mg.
Calcium pantothenate	5 mg.
Pyridoxine	0.5 mg.
Folic acid	0.25 mg.
Vitamin B_{12}	2 mcg.
Vitamin A	5000 units
Vitamin D	400 units

Bottles of 100 and 500.

* Therapeutic Nutrition, Committee on Therapeutic Nutrition, Food and Nutrition Board, Publication 234, National Research Council

For vitamin therapy in stress situations

PANALINS-T

N. R. C. STANDARD THERAPEUTIC VITAMIN CAPSULE*

Panalins-T supplies important water-soluble vitamins in the high therapeutic potencies needed to promote optimal recovery from disease or injury. Since the body cannot store appreciable amounts of these vitamins, regular provision of generous amounts is essential.

1 or 2 Panalins-T capsules daily in:

- severe illnesses
- chronic illnesses
- injuries, including fractures
- before and after surgery
- second or third degree burns
- previous vitamin depletion
- conditions involving a marked catabolic or anabolic response

to safeguard and maintain vitamin adequacy

PANALINS

N. R. C. STANDARD MAINTENANCE VITAMIN CAPSULE*

Panalins supplies protective potencies of ten vitamins needed for maintenance of the good vitamin nutrition essential to productive health.

1 or 2 Panalins capsules daily in:

- patients with inadequate or irregular diets
- patients with poor food habits
- patients with mild illnesses
- growing children and adolescents
- convalescents in late stages
- patients undergoing mild physiologic and pathologic stresses

* *Therapeutic Nutrition, Publication No. 234, National Research Council.*

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Patients . . . I have met

● *The editors will pay $1 for each story published. No contributions will be returned. Send your experiences to the Patients I Have Met Editor, MODERN MEDICINE, 84 South Tenth St., Minneapolis 3, Minn.*

Gymnastics

"Where do you feel the pain?" I asked my patient.

"All over," she replied. "I can hardly lift my arms over my head, and it's the same with my legs."—B.P.S.

Cerebral Cavity

A story is told that after Dizzy Dean was struck by a pitched ball the headlines on the sports page of one newspaper read: "Dean's Head X-Rayed; Reveals Nothing."—S.L.

Financial Fidelity

"How long has Doctor Jones been treating you?" I asked the patient who had been referred to me.

"He hasn't been treating me," replied the woman tartly. "I've paid him for every visit."—S.D.

"I made it out of empty aspirin boxes."

The first truly elastic bandage that heat won't hurt

New TENSOR is woven with Heat-Resistant live rubber threads for lasting elasticity

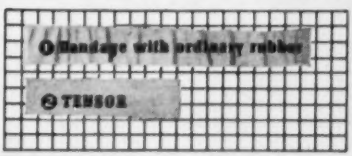
It takes live rubber threads to make a truly elastic bandage. Up to now, the live rubber has posed a laundry problem, particularly in high temperature home and commercial dryers.

Now, there's a new Tensor that needs no special laundry care—a Tensor that has been tested at 280° F. for hours on end, with no appreciable loss of stretch. So you can always be certain of its uniform, lasting elasticity in use.

Tensor puts the pressure in *your* hands, Doctor. Whether you bandage for low pressure or high, you get uniform pressure over the entire area. Tensor maintains the pressure *you* apply.

Isn't this the kind of elastic bandage you want *your* patients to wear? Why not have your nurse order them next time she replenishes office medical supplies. Available in doctor bulk put-ups at no increase in cost.

COMPARE THESE ELASTIC BANDAGES



❶ One-foot length of bandage made with ordinary rubber is stretched after high temperature drying—and stays stretched. Its elasticity "died" in the dryer.

❷ But one-foot length of heat-resistant Tensor snaps back to its original length, even after prolonged exposure to near scorching heat of commercial dryer.

New TENSOR® ELASTIC BANDAGE

Woven with Heat-Resistant live rubber threads

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"She had a 'dead-pan' expression, not 'bed-pan.'"

INDEX TO ADVERTISERS

Wine in Geriatrics?

"Wine is the nurse of old age..."
—Galen

SINCE long before the time of Galen, wine has been recommended not only for its epicurean delights but for its value in medicine—notably as an aid in combating the physical and emotional infirmities of old age.

This historical application, now supported and expanded by recent laboratory and clinical research* in American medical centers, is important to modern geriatricians—to physicians who today are giving added years of life to their patients, and who are asked to make these added years pleasant and comfortable.

New investigations have demonstrated, both in the laboratory and in the clinic, that the moderate use of wine can increase the appetite in anorexia.

They have shown that wine in judicious quantities can stimulate the lax and achlorhydric stomach of the elderly, assist in providing a more adequate fluid intake, and improve elimination by enhancing the important gastro-colic reflex.

As a gentle sedative—sometimes called the safest of all sedatives for old age—wine can help allay restlessness and irritability, easing the fears and anxieties of the elderly. The euphoria—the "glowing sense of well-being"—produced by a glass of Port, Sherry or table wine, may aid significantly in overcoming the all-pervading sense of uselessness which too often mars the last decades of life.

Physiologically, wine acts gently and moderately as a vasodilator, diuretic, relaxant, and aid to nutrition and digestion. But perhaps of equal importance, it acts psychologically as well—as a mark of "something special" to grace the diet of the aging patient.

California's 700-mile vineyard belt affords a range of soils and climate in which can be grown the world's finest wine grapes of every variety. Add to this natural advantage the modern wine-making skills and facilities of a progressive New World industry, and you have wines of strict quality standards, true to type, moderate in price. Wine Advisory Board, 717 Market Street, San Francisco 3, California.

*Research information on wine is available upon request.

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